APPENDIX 1

PINE PASS - 1983

COAL LAND DISPOSITION MAP (1:50000); DWG. No. PP 5D01

NATIONAL TOPOGRAPHIC SYSTEM 1:50,000

CANADA

SECOND EDITION

DEPARTMENT OF MINES AND RESOURCES
MINES AND GEOLOGY BRANCH
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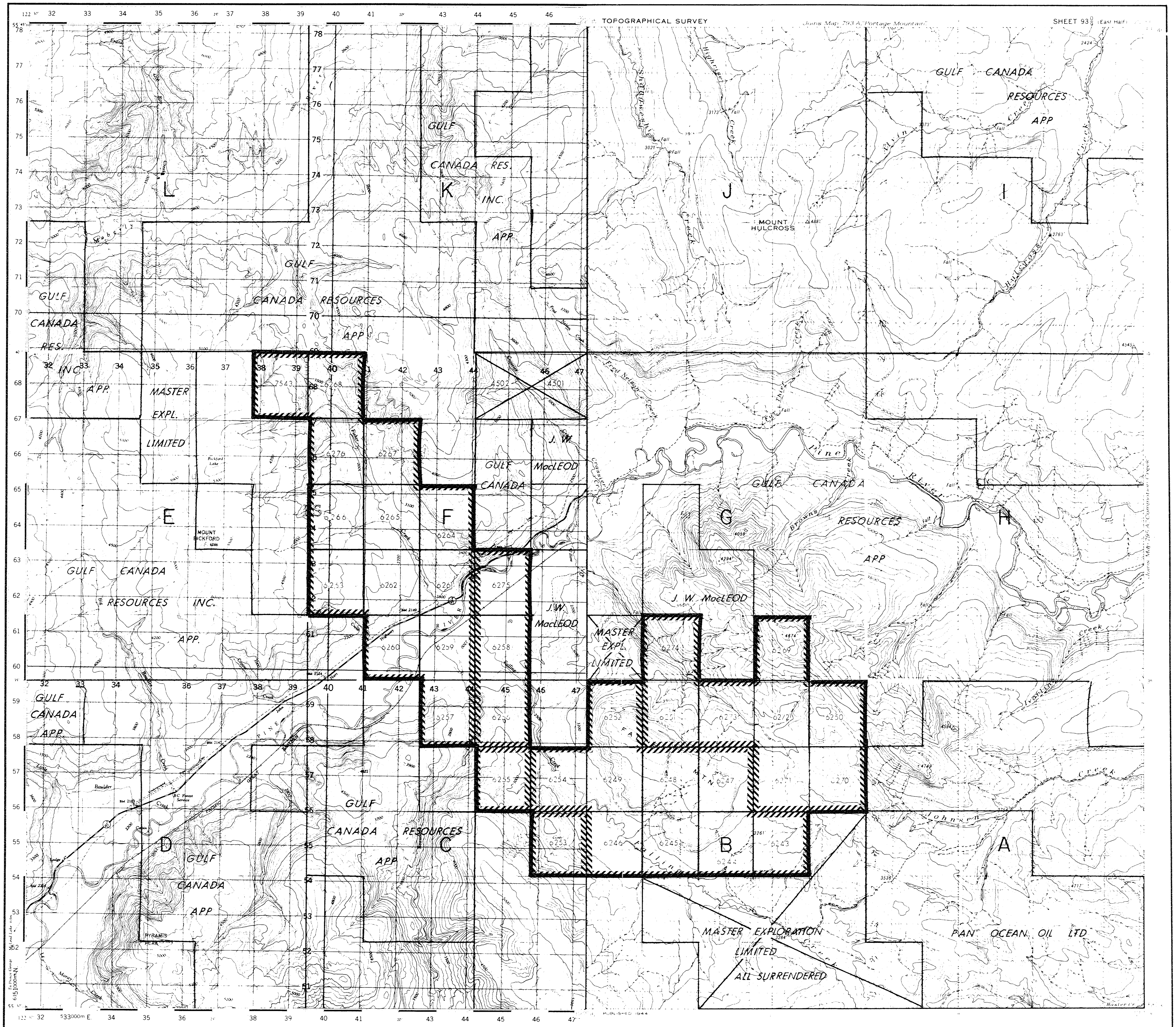
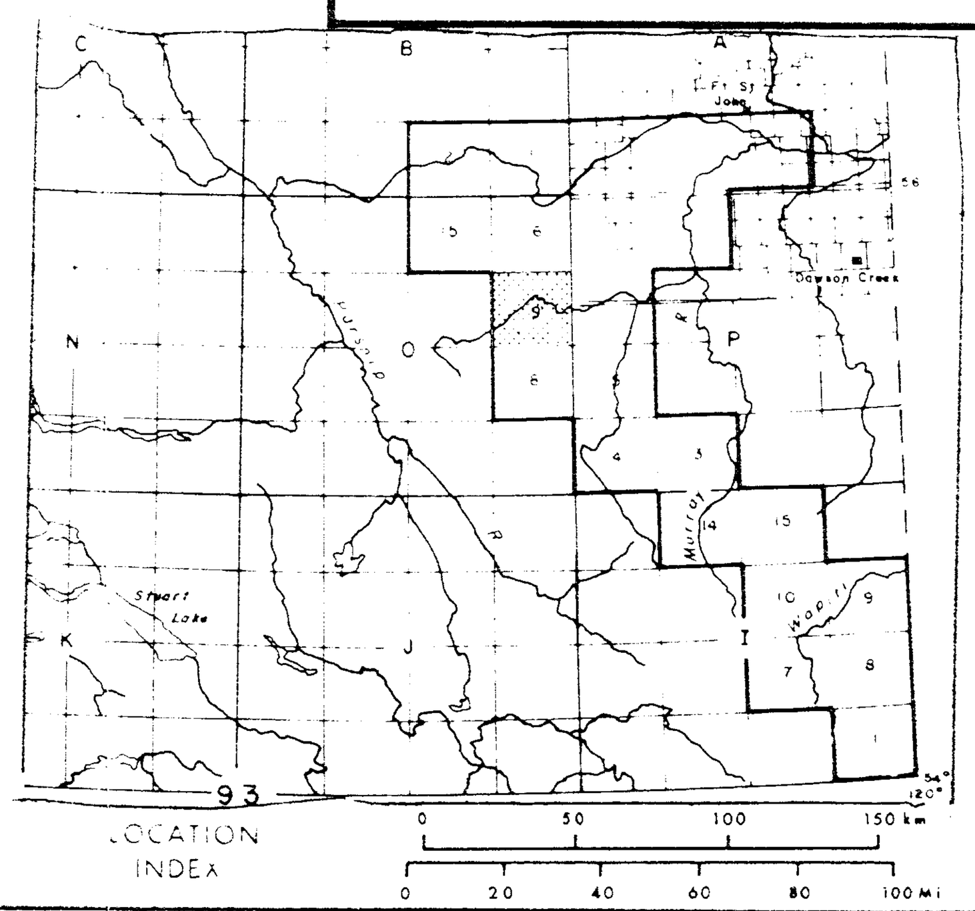
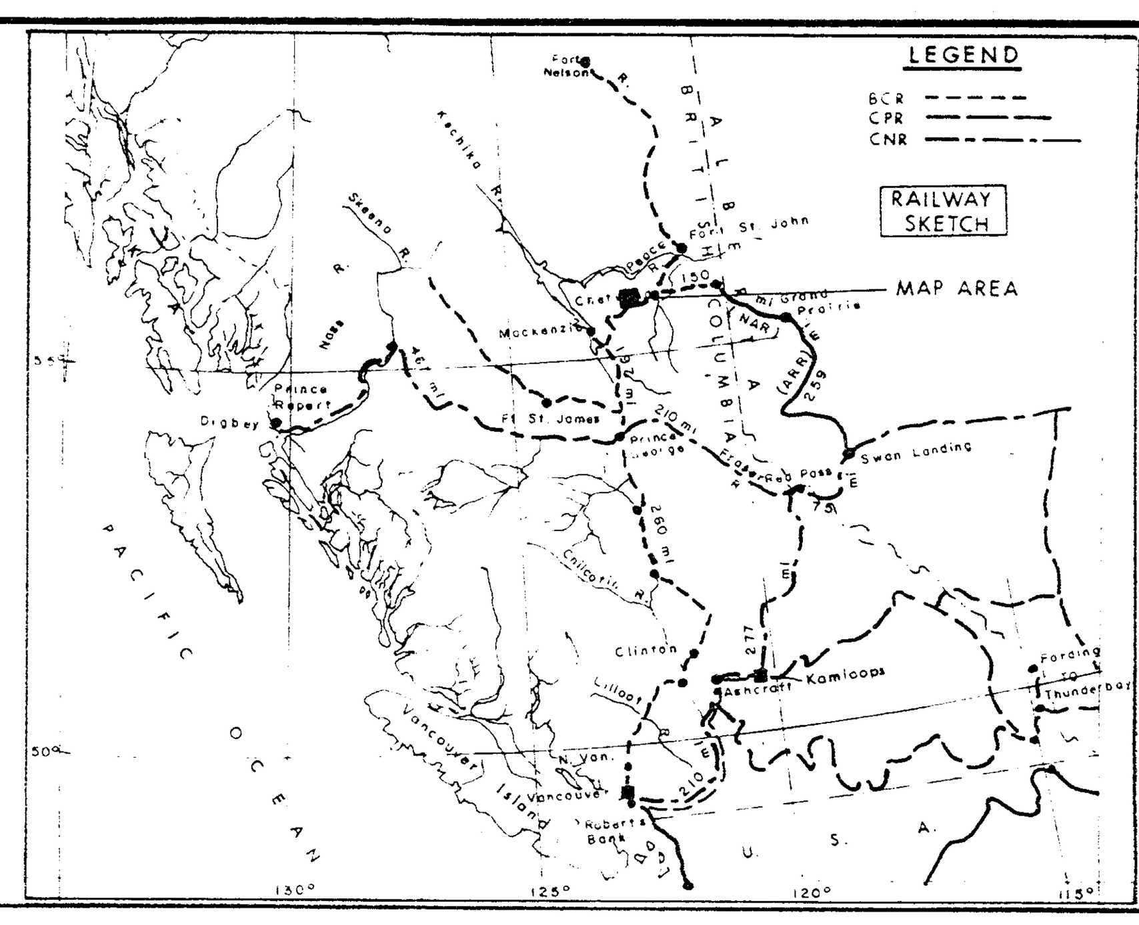
PROVISIONAL MAP







MOUNT HULCROSS

PEACE RIVER DISTRICT
BRITISH COLUMBIA

Approximate magnetic declination 25°32' East

Copies may be obtained from the Map Distribution Office, Department of Mines and Technical Surveys, Ottawa.

INDEX TO ADJOINING SHEETS

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93 O/9 WEST

////. Proposed Grouping

Crows Nest Resources Limited

EXPLORATION

PINE PASS
N.E. B.C.

COAL LAND DISPOSITION MAP

SHELL CNRL LICENCES PINE PASS
NTS 93-O 9 BLK B,C,F,G
MAP 1 of 1

NTS 93O/9

AUTHOR: A. WHITE/D. FIETZ	SCALE: 1:50,000	ENCLOSURE No:
DATE: 84.02	REVISED:	DRAWING No: PP5D01
To Accompany 1984 NOTICE OF WORK		

PINE PASS — 1983:

TRENCH PARTICULARS &

DESCRIPTIVE TRENCH LOGS

CROWS NEST RESOURCES LIMITED

TRENCH PARTICULARS

PROJECT	PINE PASS	EXCAVATED BY	PAUL DEMEULEMEESTER
		LOGGED BY	A. White, D. Fietz
AREA	N.E., B.C.	SURVEYED BY	WATSON

TRENCH NO.	DATE	APPROX. CO-ORDINATES @ MID TRENCH			GROUND ELEVATION	TRENCH DETAILS					SURVEY POINTS IDENTIFIED	REMARKS *
		REF. LOC.	E	N		BEARING	INCLIN.	LENGTH (m)	DEPTH (m)	WIDTH (m)		
TR-83-1	1983 06/12	ZONE 10 (123°)	541 120	6 163 565		084°	0	23.6	1.2	1.0	Ref 1	
						035°	0	13.0	1.2	1.0	Ref 1	
TR-83-2	06/14-16	ZONE 10 (123°)	541 050	6 163 575		286°	6° above horizontal	104.0	1.2	1.0	Ref 1	
TR-83-3	06/16	ZONE 10 (123°)	540 920	6 163 635		306°	8° above horizontal	70.0	< 1	1.0	-	
TR-83-4	06/21	ZONE 10 (123°)	540 565	6 162 790		217°	9° above horizontal	35.0	1.2	1.0	Ref 3	partial relog of TR-PN-W-8-81
TR-83-5	06/21	ZONE 10 (123°)	540 480	6 163 130		177°	10° above horizontal	50.0	1.2	1.0	Ref 2	
						163°	11° above horizontal	63.0	1.2	1.0	Ref 2	
TR-83-6	06/22	ZONE 10 (123°)	540 265	6 162 825		222°	0	46.0	1.2	1.0	-	
TR-83-6A	06/22	ZONE 10 (123°)	540 245	6 162 815		267°	15° above horizontal	13.0	1.2	1.0	-	sample; TR-6A-1 TR-6A-2
						203°	0	7.4	1.2	1.0	-	
TR-83-7	07/18, 19, 21	ZONE 10 (123°)	540 400	6 162 970		245°	8° above horizontal	150.0	2.0	1.0	Ref 4	sample TR-7-1 * (Tonstein)
						251°	" "	50.0	2.0	1.0	Ref 4	
						255°	" "	50.0	2.0	1.0	Ref 4	
						245°	" "	20.0	2.0	1.0	Ref 4	
TR-83-8	07/19	ZONE 10 (123°)	540 530	6 163 055		248°	0	26.0	1.5	1.0	Ref 4	sample TR-8-1 * (Tonstein)
TR-83-10	07/19	ZONE 10 (123°)	540 485	6 163 105		254°	0	11.0	2.0	1.0	-	
						247°	0	13.5	2.0	1.0	-	
TR-83-11	07/20, 22	ZONE 10 (123°)	540 630	6 162 935		189°	0	18.0	2.0	1.0	Ref 5	
						210°	0	17.0	2.0	1.0	Ref 5	
						221°	0	15.0	2.0	1.0	Ref 5	

* Given to W. Kilby infield on 83/07/26

CROWS NEST RESOURCES LIMITED

TRENCH PARTICULARS

PROJECT	PINE PASS	EXCAVATED BY	PAUL DEMEULEMEESTER
AREA	N.E., B.C.	LOGGED BY	A. White, D. Fietz
		SURVEYED BY	WATSON

TRENCH NO.	DATE	APPROX. CO-ORDINATES @ MID TRENCH			GROUND ELEVATION	TRENCH DETAILS					SURVEY POINTS IDENTIFIED	REMARKS *
		REF. LOC.	E	N		BEARING	INCLIN.	LENGTH (m)	DEPTH (m)	WIDTH (m)		
Continue TR-83-11	1983					230°	0	31.0	2.0	1.0	Ref 5	Samples TR-11-1 TR-11-2 TR-11-3
						248°	0	19.0	2.0	1.0	Ref 5	
						250°	0	46.0	2.0	1.0	Ref 5	
TR-83-12	07/20	ZONE 10 (123°)	539 990	6 163 230		027°	0	(62.2)	-	-	Referenced to SW leg of power line tower	Hand trench only: originally designated as 83-MS-2 Sample TR-12-1 (2 bags)
TR-83-09	07/23-27	ZONE 10 (123°)	540 600	6 163 065		212°	6° above horizontal	30.0	2.0	1.0	Ref 4	
						240°	" "	20.0	2.0	1.0	Ref 4	
						247°	" "	50.0	2.0	1.0	Ref 4	Sample TR-9-1 (2 bags)
						253°	" "	31.0	2.0	1.0	Ref 4	
						233°	" "	19.0	2.0	1.0	Ref 4	
						248°	" "	50.0	2.0	1.0	Ref 4	
						250°	" "	40.5	2.0	1.0	Ref 4	
SURVEY REFERENCE POINTS												
Reference 1	1983	Zone 10 (123°)	541 100.94	6 163 559.02	900.7							
Reference 2	"	" "	540 472.45	6 163 185.70	1002.0							
Reference 3	"	" "	540 572.17	6 162 778.83	1016.5							
Reference 4	"	" "	540 527.26	6 163 018.27	1019.5							
Reference 5	"	Survey	Reference point obliterated prior to arrival of survey crew									

TRENCH TR-83-1 DECLINATION SETTING: 29°30'

DATE: 1983/06/12 MEASURED BY: AW/DWF

TRENCH PARTICULARS LENGTH: 36.6 m
WIDTH: 1 m ±
DEPTH: 1.2 m ±

FROM SURVEY "REF 1" to "0" (ie, the start of the trench),

HORIZONTAL: AZ 008° @ 4.0 m
VERTICAL: - 1.6 m

MEASURED STRAT LOWER TO HIGHER

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
	@ "0" TR-83-1 has	. INCLINATION: 0° . BEARING: 084°
0.22	0 - 1.4	SLTSTN; dark grey to black; ochre staining; irregular fracturing; highly broken to rubbly; minor coalified plant debris; 230°/16°E
0.52	1.4 - 4.8	COAL; ground to pulverized; apparent th @ ~ 9m (on chain): 0.11 m
0.65	4.8 - 9.0	CARB. SHALE ... grading to fg SS @ 0.47 m strat. above coal; badly weathered; broken to rubbly
(to 23.6 m) 2.25 (@ 23.6+ m) 0.93	9.0 - 36.6	O/B ... @ 23.6m ... trench direction changes to . INCLINATION: 0° . BEARING: 035°
	36.6	*End of Trench*

FINIS

3/Jc.1

TRENCH TR-83-2 DECLINATION SETTING: 29°30'

DATE: 1983/06/14-16 MEASURED BY: AW/DWF

TRENCH PARTICULARS LENGTH: 104 m
WIDTH: 1 m ±
DEPTH: 1.2 m ±

FROM SURVEY "REF 1" to "0" (ie, the start of the trench),

HORIZONTAL: AZ 323° @ 1.3 m
VERTICAL: - 1.5 m

MEASURED STRAT HIGHER TO LOWER

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
NOTE: TRENCH WET (GROUND SEEPAGE AND SURFACE RUNOFF) from 0 - 53 m.		
	@ "0" TR-83-2 has . INCLINATION: 6° above horizontal . BEARING: 286°	
0.11	0 - 64.5	SLTSTN; medium to dark grey; finely laminated; Fe stainings; carb. plant fragments; irregular fracturing; 50°/6°SE; plant debris common, bedding planes irregular to undulating .... reliable BRG/BDG difficult to measure in most locales @ 19 m .... 60°/10°SE @ 56 m .... culvert across road ... trench much dryer @ 56+ m @ 60 m .... 018°/15°SE (?)
0.06	64.5 - 97.0	O/B ... there may be slight trace of coal at bottom of trench
	97.0 - 104.0	SS; fg; weathers rusty brown; massive to blocky; poor bedding; th: 0.5m; plant fragments within ... slightly carbonaceous
(to 99.0 m) 1.07 (@ 99.0+ m) 0.21		@ 99 m .... 045°/21°SE @ 102 m ... 021°/12°SE
	104.0	End of trench

FINIS

3/Jc.2

TRENCH TR-83-3 DECLINATION SETTING: 29°30'

DATE: 1983/06/16 MEASURED BY: AW/DWF

NOTE: RAN A SHORT ROAD TRAVERSE TO TIE TR-83-2 TO TR-83-3; "0" POINT FOR THE TRAVERSE IS AT END (104 m) OF TR-83-2; THE TRAVERSE HAS A . BEARING: AZ° 306
. INCLINATION: 8° above HORIZONTAL

THE TRAVERSE CUTS (DOWN) THROUGH 4.5 m OF STRAT. SECTION
... STRATA IS PRIMARILY MASSIVE SS;
@ 23 m ... 022°/17°SE ... SANDSTONE
@ 47 m ... 018°/23°SE ... SANDSTONE
... END OF TRAVERSE/START of TR-83-3

* * *

TRENCH PARTICULARS LENGTH: 70 m
WIDTH: 1 m ±
DEPTH: <1 m

MEASURED STRAT HIGHER TO LOWER

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
	@ "0" TR-83-2 has . INCLINATION: 6° above horizontal . BEARING: AZ 298°	
4.98	0 - 6.0	SS ... as noted in TRAVERSE notes; signif. joint system @ 230°/66°NW (@ 7 m on chain)
2.07	6.0 - 8.5	COAL
17.03	8.5 - 29.0	SS; fg; massive to blocky; weathers rusty; joint system @ 7 m, 238°/55°NW; hard; well cemented
29.82	29.0 - 70.0	O/B
	70.0	End of Trench

FINIS

3/Jc.3

TRENCH TR-83-4* DECLINATION SETTING: 29°30'

DATE: 1983/06/21 MEASURED BY: AW/DWF

TRENCH PARTICULARS LENGTH: 35 m
WIDTH: 1 m ±
DEPTH: 1.2 m ±

* partial relog of TR-PN-W-8-81

MEASURED STRAT HIGHER TO LOWER

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
	. from "0" to rd junction w/ "Bernie's" Hwy: 48 m @ AZ 19°	
	. @ "0" TR-83-4 has . INCLINATION: 9° above horizontal	
	. BEARING: 217°	
2.77	0 - 3.50	O/B
1.67	3.50 - 5.60	MUDSTONE ... fissile to friable
0.16	5.60 - 5.80	SHALE
0.20	5.80 - 6.05	COAL ... true th: 0.20 m
2.10	6.05 - 8.70	SLTSTN; beige; broken
0.83	8.70 - 9.75	COAL; true th: ~ 0.90 m; carb. shale bands throughout
1.39	9.75 - 11.50	COAL/CARB SH/MDSTN; broken; fissile to friable
0.56	11.50 - 12.20	MUDSTONE
0.32	12.20 - 12.60	COAL; true th: 0.20 m
1.11	12.60 - 14.00	SILTSTONE; beige; broken
0.49	14.00 - 14.62	MUDSTONE; carbonaceous to base
0.70	14.62 - 15.50	COAL; true th: ~ 0.75 m
0.32	15.50 - 15.90	CARB. SHALE; fissle to broken
0.67	15.90 - 16.75	SS; fg; tan
0.20	16.75 - 17.00	CARB. SHALE

* Average Strike/Dip derived from TR-PN-W-8-81: 237°/67°

3/Jc.4

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.40	17.00 - 17.50	SILTSTONE
1.11	17.50 - 18.90	SANDSTONE
0.40	18.90 - 19.40	SILTSTONE
0.63	19.40 - 20.20	MUDSTONE; sl. carb.
1.43	20.20 - 22.00	SS; vfg to fg; hard
0.95	22.00 - 23.20	SHALE ... carb/coaly to base
2.66	23.20 - 26.55	COAL with SHALE splits throughout (<0.10 m each)
0.24	26.55 - 26.85	COALY SHALE
0.36	26.85 - 27.30	SILTSTONE; beige
6.11	27.30 - 35.00	SANDSTONE; fg ... @ 35.00 m, SS o/c's on surface
	35.0	End of Trench

FINIS

NOTE: from "26.55" to Ref 3 (top of nail on stump on opposite side of rd) 14.5 m @ AZ: 132°; inclination 8° above horizontal

from "23.20" to Ref 3, 14.3 m @ AZ: 147°, inclination 10° above horizontal

3/Jc.5

TRENCH TR-83-5 DECLINATION SETTING: 29°30'

DATE: 1983/06/21 MEASURED BY: AW/DWF

TRENCH PARTICULARS LENGTH: 113 m
WIDTH: 1 m ±
DEPTH: 1.2 m ±

MEASURED STRAT LOWER TO HIGHER

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
	. from "0" to culvert (SURVEY REF 2): 8.3 m @ AZ: 346°	
	. @ "0" TR-83-5 has . INCLINATION: 10° above horizontal	
	. BEARING: 177°	
1.35	0 - 5.0	O/B
1.44	5.0 - 10.4	SANDSTONE; vfg; hard; Fe staining; med. to dark grey; minor calcite filled fractures; minor slickensiding; extreme weathering in some intervals; 008°/30°E @ 7.0 m 006°/42°E @ 9.5 m
0.45	10.4 - 12.1	CARB/COALY SHALE; soft; crushes in hand; fissile; grades to MDSTN up-section; rust-red/ochre fireclay (?) wisps in carb/coaly shale
0.19	12.1 - 12.8	SILTSTONE; 009°/42°E
0.04	12.8 - 12.95	COAL;
2.89	12.95 - 23.8	SILTSTONE (grading to fg SS); slickensided; tan to beige; blocky; hard 011°/54°E @ 15 m 011°/47°E @ 16 m
0.05	23.8 - 24.0	COAL;
0.72	24.0 - 26.7+	CARB. SHALE, silty

+ assumed change in strike/dip @ 26.7 m

3/Jc.6

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
1.97	26.7 - 47.3	SILTSTONE; slickensided; tan to beige; fragmented; no apparent bedding ... seemingly "concoidal"; highly weathered w/ "limonite" staining @ 38 m, 343°/55°E
0.09	47.3 - 48.2	COAL; bright; friable
0.04	48.2 - 48.6	CARB. SHALE; fissile
0.08	48.6 - 49.45	COAL
0.05 2.55	49.45 - 55.8+ NOTE: At 50.0 m -	MUDSTONE; beige to tan; broken to fractured INCLINATION: 11° above horizontal - BEARING: 163°
3.60	55.8 - 64.0	SILTSTONE; tan to beige, fragmented, no apparent bedding @ 58 m, 011°/47°E
1.32	64.0 - 67.0	? COAL/SILTSTONE ... but no continuity from one side of trench to other .... no idea what's happening here! @ 64 m, 016°/45°E
3.73	67.0 - 75.5	COAL; bright; blocky @ (Strat) top, limonite stained MDST @ 75.5, 000°/45°E
	See FIETZ NOTEBOOK for futher sketches/notes of this interval (P33,34)	
0.57	75.5 - 76.8	MUDSTONE
0.53	76.8 - 78.0	CONGLOMERATE (BLUESKY?); moderate to poorly sorted; poorly cemented ... white "chalky" staining on weathered surfaces.

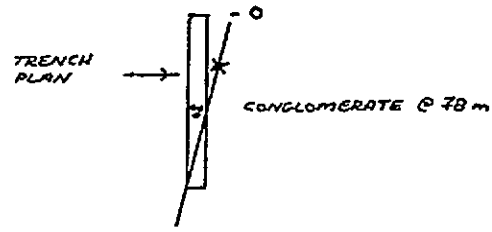
+ assumed changes in strike/dip: 50.0 m & 78.0 m

3/Jc.7

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY

* * *

May be a syncline @ ∽ 78 m; @ <78 m, dips are easterly ...
@ >78 m dips are westerly



4.71	78.0 - 108.0	SHALE (MOOSEBAR?), silty; tan to beige @ 81 m, 177°/42°W @ 101 m, 147°/78°W @ 85 m, well developed joint systems 153°/vertical 037°/75°SE
0.78	108.0 - 113.0	O/B
	113.0	End of Trench

FINIS

3/Jc.8

TRENCH TR-83-6 DECLINATION SETTING: 29°30'

DATE: 1983/06/22 MEASURED BY: AW/DWF

TRENCH PARTICULARS LENGTH: 36.6 m
WIDTH: 1 m ±
DEPTH: 1.2 m ±

MEASURED STRAT HIGHER TO LOWER

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
	. @ "0" TR-83-6 has	. INCLINATION: 0° . BEARING: AZ: 222°
	. from "0" to intersection of main road and landing access road: 22 m @ 100° AZ	
2.78	0 - 3.2	O/B ... may be some coal bloom @ bottom of trench @ 1.5 - 1.7 m
0.78	3.2 - 4.1	SILTSTONE; med. brown to grey; 340°/80° E
0.74	4.1 - 4.95	CARB. SHALE; silty; fissile
0.09	4.95 - 5.05	COAL
0.57	5.05 - 5.7	SILTSTONE; tan to grey; finely laminated; 334°/81°E
1.13	5.7 - 7.0	SANDSTONE; fg; highly weathered; minor coaly/carb. wisps (<1 mm thick)
2.09	7.0 - 9.4	CARB MUDSTONE; dark grey to black; fissile; thin (<1 mm) coaly/carb. bands throughout
0.61	9.4 - 10.1	SILTSTONE; tan to grey
0.61	10.1 - 10.8	CARB. MUDSTONE; dark grey to black; fissile; minor plant fragments
0.35	10.8 - 11.2	COAL ... sharp roof contact; approximate th: 0.43 m 0 - 0.23 COAL, clean 0.23 - 0.28 SHALE PTG 0.28 - 0.43 COAL, clean
0.70	11.2 - 12.0	CARB. SHALE ... coaly to base of unit

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.48	12.0 - 12.55	COAL; dull to bright, finely ground
2.04	12.55 - 14.9+	MUDSTONE/SILTSTONE interbedded; sltstn is finely laminated; sl. carbonaceous; broken
0.91	14.9 - 15.9	SANDSTONE; severely weathered; "limonite" staining, crumbles easily; 312°/58°E
1.18	15.9 - 17.2	SILTSTONE; broken; dark brown to tan
0.59	17.2 - 17.85	CARB. MUDSTONE; broken
0.95	17.85 - 18.90	COAL; 0.08 dull high ash band @ 18.55 m
0.14	18.90 - 19.05	CARB/COALY SHALE
0.86	19.05 - 20.0	SILTSTONE; dark brown; broken
2.36	20.0 - 22.6	SANDSTONE; fg; med. grey; weathers dark brown; rubbly
0.54	22.6 - 23.2	CARB. SHALE
0.45	23.2 - 23.7	SANDSTONE; fg; med. grey; weathers dark brown
0.45	23.7 - 24.2	CARB. SHALE, silty; dark grey to black
1.54	24.2 - 25.9	SILTSTONE; light brown; broken
2.09	25.9 - 28.2	COAL; soft; bright; broken at top ... more solid to base; sharp contact at base
0.18	28.2 - 28.4	SILTSTONE; plant fragments common (not carbonaceous); 325°/74°E
0.45	28.4 - 28.9	COALY SHALE
1.09	28.9 - 30.1	CARB. MUDSTONE
1.27	30.1 - 31.5	SANDSTONE; fg; light brown
0.73	31.5 - 32.3	COAL, blocky; 0.15 m shale band @~32 m
9.70	32.3 - 43.0	SILTSTONE; sl. carbonaceous; Fe staining in some fractures; thin mudstone bands interbedded

+ assumed change of strike/dip @ 14.9 m

3/Jc.10

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
2.72	43.0 - 46.0	COAL ... se TR-83-6A for description ... trench is deep and full of H_2O
	46.0	End of Trench

FINIS

3/Jc.11

TRENCH TR-83-6A DECLINATION SETTING: 29°30'

DATE: 1983/06/22 MEASURED BY: AW/DWF

TRENCH PARTICULARS LENGTH: 20.4 m
WIDTH: 1 m ±
DEPTH: 1.2 m ±

MEASURED STRAT HIGHER TO LOWER

CALCULATED* TRUE TH (m)	INTERVAL (m)	LITHOLOGY
	. "0" of TR-83-6 A is "37.0" of TR-83-6 . @ "0" TR-83-6A has . INCLINATION: 15° above horizontal . BEARING: 267° AZ	
3.78	0 - 6.4	SILTSTONE (as per TR-83-6 ... 32.3 - 43.0 m)
0.65	6.4 - 7.5	COAL - (part of sample TR-6A-2)
0.09	7.5 - 7.65	MUDSTONE - (part of sample TR-6A-2)
1.92	7.65 - 10.90	COAL w/minor thin clay; "limonite" stain clay band @ 10.2 m (part of sample TR-6A-2)
0.38	10.9 - 11.55	SHALY COAL (sample TR-6A-1)
	NOTE: @ 11.55 m ... edge of log landing ... @ >11.55 trenching through "uncut area"	
0.76 (to 13.0 m) (@ 13.0 + m) 1.39	+11.55 - 15.0 11.55 - 13.0	SILTSTONE; broken; rubbly; med. grey 325°/55°E
	NOTE: @ 13.0 m ... trench has . INCLINATION: 0° . BEARING: 203° AZ	
2.43	15.0 - 18.5	SANDSTONE; med. grey; fg; finely bedded
1.04	18.5 - 20.0	MUDSTONE
0.28	20.0 - 20.4	COAL
	20.4	End of Trench

* average strike/dip to "11.55 m" (from TR-83-6) assumed to be 319°/66° E
+ assumed change in strike/dip @ 11.55 m

FINIS
3/Jc.12

TRENCH TR-83-7 DECLINATION SETTING: 29°30'

(LONG TRENCH WEST OF LOOP ROAD)

DATE: 1983/07/18-19 MEASURED BY: AW/DWF

TRENCH PARTICULARS LENGTH: 270.0 m
WIDTH: 1 m ±
DEPTH: 2 m ±

MEASURED STRAT HIGHER TO LOWER

INCLINATION: 8° above horizontal
BEARING: 245° AZ

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
	. from survey ref 4 to "0" of TR-83-7 ... 14.5 m @ 273° AZ . point "0" is approximately 6 m westerly from edge of loop road	
11.36	0 - 12.5	SILTY MUDSTONE (possibly Kmb??); calcareous; dark grey; hard; @ 2 m ... 337°/70°E; calcite stringers common, rusty weathering @ 5 - 6 m; @ 8 m ... 335°/76°E
1.28	12.5 - 13.9	CONGLOMERATE (probably Bluesky ...?)
	NOTE: @ >13.9 m ... floor of trench filled with H_2O from rainfall and subsurface springs ... depth of H_2O varies	
0.27	13.9 - 14.2	MUDSTONE
0.14	14.2 - 14.35	COAL
0.59	14.35 - 15.0	MUDSTONE
0.91	15.0 - 16.0	COAL
4.56	16.0 - 21.0	TRENCH UNSTABLE... NO COAL ... APPEARS TO BE fg SEDIMENTS of SS, SLTSTN and MUDSTONE
1.46	21.0 - 22.6	MUDSTONE; @ 21 m ... 345°/75°E
0.30	+22.6 - 23.0	COAL; appears to be quite clean

+ assumed change of strike/dip @ 22.6 m

3/Jc.13

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.75	23.0 - 24.0	SANDSTONE, fg; @ 23 m ... 350°/55°E
0.08	24.0 - 24.1	COAL: fine to powdery
1.05	24.1 - 25.5	MUDSTONE
0.23	25.5 - 25.8	SANDSTONE; fg
0.98	25.8 - 27.1	SILTSTONE
0.45	27.1 - 27.7	SANDSTONE; med. grey; hard; fg; limonite weathering
3.68	27.7 - 32.6	SILTSTONE/MUDSTONE interbedded
0.23	32.6 - 32.9	COALY SHALE
0.68	32.9 - 33.8	SANDSTONE, very hard and resistant ... forms ridge on trench floor; fg
1.05	33.8 - 35.2	COVERED ... O/B only
0.68	35.2 - 36.1	SILTSTONE ... dark grey to black
0.30	36.1 - 36.5	SANDSTONE; fg, 340°/58°E
0.75	36.5 - 37.5	COVERED ... O/B only
2.63	37.5 - 41.0	MUDSTONE/SILTSTONE interbedded
3.01	41.0 - 45.0	SILTSTONE; broken to rubbly
0.23	45.0 - 45.3	SANDSTONE; limonitic weathering; @ 45 m ... 341°/59°E; fg; med. grey; hard
1.43	45.3 - 47.2	SILTSTONE
13.38	47.2 - 65.0	COVERED ... O/B only and/or FLOODED
3.98	65.0 - 70.3	SILTSTONE; dark grey to black; broken to rubbly; minor Fe staining
1.05	70.3 - 71.7	MUDSTONE ... sl. carbonaceous in upper 0.10 m
0.60	71.7 - 72.5	COAL

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.23	72.5 - 72.8	MUDSTONE; dark grey to black; soft; fissile to friable
1.20	72.8 - 74.4	SILKSTONE/SANDSTONE, fg
3.61	74.4 - 79.2	SS; fg; dark grey; Fe staining on weathered surfaces; plant casts; hard; @ 75 m ... 335°/57°E; @ 75.5 m ... X-bedding indicating "way up" to east
1.13	79.2 - 80.7	SHALE; brown to grey with <5 cm thick coal bands @ 0.10 m intervals; soft
0.68	80.7 - 81.6	SANDSTONE; fg; common plant casts; massive; 340°/57°E
1.35	81.6 - 83.4	COAL ZONE with TONSTEIN BAND at mid-interval

APPARENT TRUE TH (m)	LITHOLOGY
0.10	SHALE: dark grey to black
0.07	COAL; dirty
0.35	COAL; bright; clean; good cleat
0.06	TONSTEIN BAND; silver to deep maroon; soft; "speckled" with white flex
0.25	COAL; clean; bright
0.15	SILTSTONE
0.52	COAL; appears clean

SAMPLE TR-7-1*

* sample taken for W. Kilby - "Project Geologist" for BCM of EM and PR ... he is currently doing research on correlatability of coal seams using tonsteins.

3/Jc.15

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.98	83.4 - 84.7	MUDSTONE; carbonaceous with minor thin coaly lenses
0.45	84.7 - 85.3	COAL; approx. true thickness: 0.4 m
10.30	85.3 - 99.0	SILTSTONE ... with minor interbedded MUDSTONE; 0.10 m of coal @ 87.3 m 91.5 m @ 92 m ... 337°/60°E; x-bedding indicates "way up" to east; @ 95 - 96 m increasing carb. material
1.88	99.0 - 101.5	SANDSTONE; fg; extreme limonitic weathering; med. grey; massive; hard
2.48	101.5 - 104.8	SILTSTONE; dirty; brown to grey; 0.1 m coal @ 103.2 m
0.45	104.8 - 105.4	COAL; apparent true thickness: 0.6 m
0.45	105.4 - 106.0	SANDSTONE; fg; dark grey
2.10	106.0 - 108.8	COVERED ... O/B and/or H_2O
2.40	108.8 - 112.0	MUDSTONE, carbonaceous with minor coaly debris
0.61	112.0 - 112.8	SHALY COAL
1.50	112.8 - 114.8	MUDSTONE ... sl. carbonaceous; minor coaly debris throughout
1.50	114.8 - 116.8	SILTSTONE; 336°/54°E
0.98	116.8 - 118.1	SANDSTONE: med. grey with limonitic weathering; fg; hard
2.18	118.1 - 121.0	SANDSTONE; brown-grey; dirty with coalified plant debris; fine, irregular laminae
8.27	121.0 - 132.0	MUDSTONE ... sl. carbonaceous; minor coaly debris throughout; 0.20 m dirty coal @ 122 m; SLTSTN, light grey @ 126.2 m ... true thickness 0.2 m
1.88	132.0 - 134.5	SILTSTONE with interbedded MUDSTONE

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.53	134.5 - 135.2	COALY MUDSTONE
0.45	135.2 - 135.8	COAL; dirty
0.45	135.8 - 142.5	COVERED ... O/B only and/or FLOODED; will drain and/or excavate later and in-fill lithology of any bedrock exposed
1.05	142.5 - 143.9	CARBONACEOUS SHALE
1.95	143.9 - 146.5	COAL; appears to be quite dirty
0.15	146.5 - 146.7	MUDSTONE
0.83	146.7 - 147.8	SILTSTONE with coalified plant debris
0.90	147.8 - 149.0	MUDSTONE ... sl. carbonaceous; minor coaly debris throughout; minor thin interbeds of SLTSTN
0.53	149.0 - 149.7	COAL; dirty
(to 150.0 m) 0.23 (@ 150.0+ m) 0.38	149.7 - 150.5	MUDSTONE ... sl. carbonaceous; minor coaly debris throughout
	NOTE: @ "150.0", the trench bearing changes to 251° AZ	
0.75	150.5 - 151.5	SILTSTONE
0.53	151.5 - 152.2	MUDSTONE; carbonaceous
2.49	152.2 - 155.5+	SILTSTONE
0.44	155.5 - 156.0	SANDSTONE; fg; finely bedded; limonitic stains; resistent and hard; 337°/66°E
2.55	156.0 - 158.9	COVERED
0.35	158.9 - 159.3	MUDSTONE, carbonaceous
0.53	159.3 - 159.9	SANDSTONE; fg
0.88	159.9 - 160.9	COAL

+ change in strike/dip @ 155.5 m

3/Jc.17

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
4.39	160.9 - 165.9	COVERED
0.35	165.9 - 166.3	MUDSTONE; dark grey; 334°/66°E
4.48	166.3 - 171.4	SANDSTONE; fg; dark grey; fragmented in some intervals
6.32	171.4 - 178.6	COVERED
0.44	178.6 - 179.1	SANDSTONE; fg; non-calcareous; heavy limonitic staining
10.53	179.1 - 191.1	COVERED
2.11	191.1 - 193.5	SANDSTONE; hard and resistant; minor limonitic staining; finely laminated
(to 200.0 m) 5.71 (@ 200.0+ m) 3.03	193.5 - 203.5	COVERED and/or FLOODED
	NOTE: @ "200.0", the trench bearing changes to 255° AZ	
0.69	203.5 - 204.3	SANDSTONE; fg; weathered; Fe stained
2.94	204.3 - 207.7	COALY ZONE ... interbedded coaly shale, carbonaceous shales and mudstones; minor coal bands <0.30 m thick
0.87	207.7 - 208.7	CARBONACEOUS SHALE; black; harder and more resistant than previous unit; 335°/73°E
0.52	208.7 - 209.3	COAL ... dirty
0.78	209.3 - 210.2	SANDSTONE; fg; dark grey, slightly calcareous; 330°/76°E
4.59	210.2 - 215.5	COVERED
3.55	215.5 - 219.6	SANDSTONE; fg; calcareous; blocky; broken; minor Fe staining
0.61	219.6 - 220.3	SILTSTONE
1.04	220.3 - 221.5+	COVERED

+ change in strike/dip @ 221.5 m

3/Jc.18

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
3.98	221.5 - 226.7	SANDSTONE; fg; dark grey; Fe staining, platy; @ 224 m ... 320°/70°E
0.54	226.7 - 227.4	MUDSTONE ... carbonaceous
		NOTE: spoil pile opposite trench contains coaly material
2.14	227.4 - 230.2	FLOODED
2.30	230.2 - 233.2	SANDSTONE; non-calcareous; fg; dark grey; weathers brownish-grey
1.23	233.2 - 234.8	COVERED
0.69	234.8 - 235.7	SANDSTONE; fg
1.38	235.7 - 237.5	COVERED
0.46	237.5 - 238.1	SANDSTONE; fg; brown, weathered
2.14	238.1 - 240.9	COVERED
1.30	240.9 - 242.6	SANDSTONE; 317°/65°E
(to 250.0 m) 5.66 (@ 250.0+ m) 16.44	242.6 - 270.0	COVERED ... minor coaly debris on spoil pile opposite trench @ 245 m

NOTE: @ "250.0", the trench bearing changes to 245° AZ

270.0 End of Trench

NOTE: "270.0" is 5 m from the eastern edge of the upper road

FINIS

3/Jc.19

TRENCH TR-83-8 DECLINATION SETTING: 29°30'

(LOG LANDING ADJACENT EAST OF WEST LOOP ROAD)

DATE: 1983/07/19 MEASURED BY: AW/DWF

TRENCH PARTICULARS LENGTH: 26.0 m
WIDTH: 1 m ±
DEPTH: 1.5 m ±

INCLINATION: 0°
BEARING: 248° AZ

CALCULATED TRUE TH (m)	INTERVAL (m)		LITHOLOGY
. from survey "Ref. 4" to "0" of TR-83-8 ... 49.0 m @ 017° AZ			
0.97	0 - 1.0		COVERED
1.25	1.0 - 2.3		SILTSTONE; 344°/72°E
1.83	2.3 - 4.2		COAL ... 0.03 m calcite band at top of unit

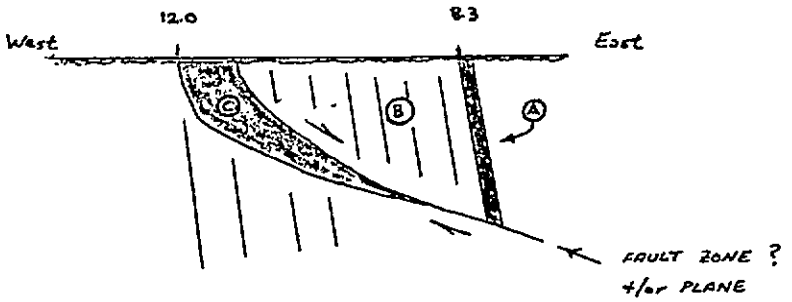
APP TH (m)	LITHOLOGY
0.52	COAL
0.23	MUDSTONE - coaly
0.20	COAL
SAMPLE TR-8-1* 0.10	TONSTEIN
0.23	COAL ... slickensided; soft

1.06	4.2 - 5.3		SILTSTONE; dark grey; hard
0.19	5.3 - 5.5		COAL; true thickness: 0.25 m
0.68	5.5 - 6.2		MUDSTONE
1.83	6.2 - 8.1		SILTSTONE; brown-grey; highly broken to fragmented to rubbly; @ 8 m ... 334°/83°E
0.19	8.1 - 8.3	A	COALY SHALE/SHALEY COAL

3/Jc.20

* Sample taken for W. Kilby, "Project Geologist" for B.C. M of E,M and PR ... he is currently doing research on correlatability of coal seams using tonsteins.

CALCULATED TRUE TH (m)	INTERVAL (m)		LITHOLOGY
3.57	8.3 - 12.0	B	MUDSTONE; brown to grey; coal wedge (C) cutting across strata ... see drawing



0.29	12.0 - 12.3	SHALE ... very friable
1.54	12.3 - 13.9	SILTSTONE; calcareous with calcite veinlets throughout; hard ledges throughout; @ 13.2 m, thin brecciated, white calcite veins
0.19	13.9 - 14.1	COAL
1.93	14.1 - 16.1	MUDSTONE, highly broken; dark grey; very calcareous
0.48	16.1 - 16.6	SILTSTONE; resistant; massive; very calcareous
2.02	16.6 - 18.7	SILTSTONE; moderate bedding; less resistant than above unit; very calcareous
1.06	18.7 - 19.8	COAL
0.19	19.8 - 20.0	SILTSTONE; hard; calcareous
0.10	20.0 - 20.1	COAL
0.39	20.1 - 20.5	SILTSTONE; finely bedded
0.48	20.5 - 21.0	SILTSTONE; hard; massive; resistant

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
3.57	21.0 - 24.7	SILTSTONE; finely bedded; blocky to broken; 343°/70°E; (?) PLUNGE 16° @ 150° (?); very calcareous; numerous calcite veins throughout
1.25	24.7 - 26.0	SILTSTONE; hard; massive; resistant; 338°/84°E
	26.0	End of Trench

FINIS

3/Jc.22

TRENCH TR-83-9 DECLINATION SETTING: 29°30'

(LONG TRENCH EAST OF LOOP ROAD)

DATE: 1983/07/23-27 MEASURED BY: AW/DWF

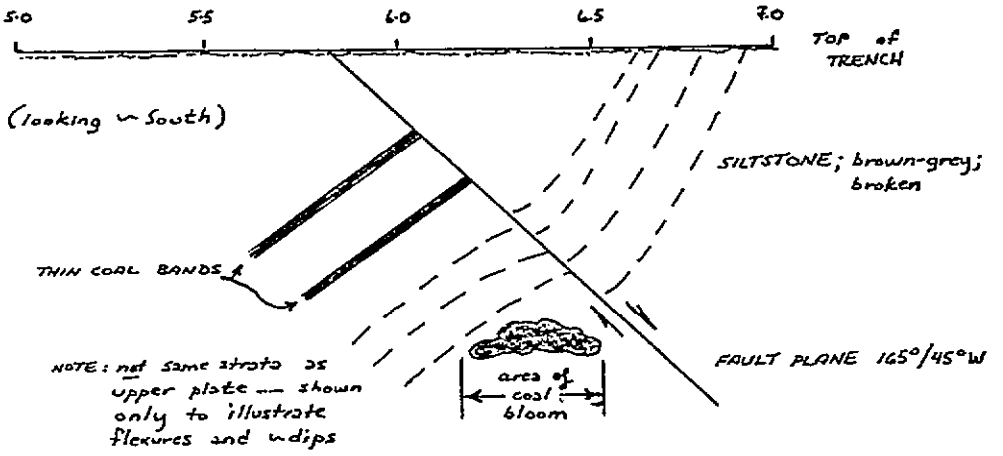
TRENCH PARTICULARS LENGTH: 240.5 m
WIDTH: 1 m ±
DEPTH: 2 m ±

INCLINATION: 6° above horizontal
BEARING: 212° AZ

MEASURED STRAT HIGHER TO LOWER

NOTE: IN MANY INTERVALS, THE TRENCH IS FLOODED ... TRENCH WALLS ARE VERY UNSTABLE

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.43	0 - 2.0	COVERED and/or FLOODED
0.65	2.0 - 5.0	SILTSTONE; dark grey; hard; calcareous
0.43	5.0 - 7.0	FAULT ZONE ... see sketch



0.39	7.0 - 8.8	SILTSTONE; brown-grey; broken; non-calcareous; minor carbonaceous material to base; @ 8.8 m ... 345°/25°E

3/Jc.23

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.20	8.8 - 9.7	SANDSTONE; fg; dark grey; hard; calcareous
0.93	9.7 - 14.0	SILTSTONE/MUDSTONE interbedded, minor thin coal/carbonaceous bands throughout, brown to grey
0.04	14.0 - 14.2	COAL
1.24	14.2 - 19.9	SANDSTONE; vfg; dark grey to black; carbonaceous debris throughout; seemingly massive; no apparent bedding; @ 22 m ... 357°/35°E
(to 30.0 m) 2.19 (@ 30.0+ m) 1.07	19.9 - 33.0	SILTSTONE/SS, fg; dark grey; calcareous; minor carbonaceous material throughout ... very carbonaceous zone @ 22.5 - 23.2 m; @ 26 m blocky jointing @ 255°/87° 210°/27°; @ 27 m ... 350°/30°E
	NOTE: @ "30.0 m" trench bearing becomes 240° AZ	
1.07	33.0 - 36.0	COVERED ... sides caved before trench could be logged ... spoil pile adjacent to trench indicates same unit as 19.9 - 33.0 m
(to 50.0 m) 4.98 (@ 50.0+ m) 10.66	36.0 - 73.5+	SANDSTONE, vfg/SILTSTONE; @ 36.0 m ... 350°/26°E; as previous unit, this interval is very poorly exposed ... the bottom of the trench has H_2O and mud in it, all indications are that it is the same unit throughout; any other units must be quite thin and therefore,very minor in nature, @ 43 m ... 358°/30°E
	NOTE: @ "50.0 m" trench bearing becomes 247° AZ	
		@ 55 m ... 030°/37°E @ 56 m ... 017°/40°E
		@ 61 m ... 005°/35°E and x-bedding to indicate "way-up" to east @ 66 m ... 017°/50°E; lower 5 m contains finer grained sediments, i.e. more SLTSTN and MDSTN interbeds @ 69 m ... 015°/30°E

+ change in strike/dip and bearing @ 50.0 m

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.45	73.5 - 74.5	CARBONACEOUS MUDSTONE
0.36	74.5 - 75.3	SILTSTONE; dark grey to black; slightly carbonaceous; non-calcareous
1.68	75.3 - 79.0	MUDSTONE; dark grey; @ 76 m ... 020°/39°E
2.13	79.0 - 83.7	COAL ZONE (sample TR-9-1) 79.0 - 79.7; clean coal; true th: 0.4 m 79.7 - 83.7; higher ash unit than above
2.95	83.7 - 90.2	SILTSTONE/SANDSTONE; fg; dark brown to grey; irregularly fractured to rubbly; coalified plant costs common
0.36	90.2 - 91.0	SANDSTONE; fg; finely bedded to platy; Fe staining; soft; dirty; 005°/34°E
(to 100.0 m) 4.08 (@ 100.0+ m) 9.65	91.0 - 120.0	MUDSTONE; minor, thin (<0.10 m) carb./coaly bands throughout, minor silty bands; 0.20 m coal bands @ 101 m and 105 m
	NOTE: @ "100.0 m" trench bearing becomes 253° AZ @ 105.0 - 111.0 m ... flowing spring at bottom of trench	
		upper 0.02 m has yellow-weathered calcite fragments; @ 105 m ... 005°/38°E, @ 111 - 112 m ... hard "Fe-stone" type bed ... dark grey on fresh surface
(to 131.0 m) 5.31 (@ 131.0+ m) 3.02	120.0 - 139.3	SANDSTONE; fg; dark grey; minor MDSTN/SLTSTN; minor carbonaceous zones; @ 120 m ... 018°/35°E; dirty; calcareous; plant casts common; Fe staining in some intervals; @ 129.5 m ... 000°/35°E
	NOTE: @ "131.0 m" trench bearing becomes 233° AZ	
		... @ 138.0 m ... 356°/45°E
(to 150.0 m) 3.90 (@ 150.0+ m) 4.50	139.3 - 159.8	COVERED and/or FLOODED
	NOTE: @ "150.0 m" trench bearing becomes 248° AZ	

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.78	159.8 - 161.5	COAL
0.28	161.5 - 162.1	SILTSTONE; medium to dark grey; true thickness: 0.60 m
2.48	162.1 - 167.5	COAL with THIN BONE INTERVALS; 1 mm "hematite-stain" granules (oolitic?) @ 0.2 m from top

TRUE TH (m)	LITHOLOGY
0.2	COAL
0.2	BONE COAL
?	COAL ... high ash bands to base of interval

@ 167.5 m ... 350°/40°E

2.29	167.5 - 172.5	SHALE, silty; dark grey to black; abundant plant casts; very slightly carbonaceous; non-calcareous; fissile to friable; minor Fe staining
2.07	172.5 - 177.0	SANDSTONE; calcareous (on fresh surface); dirty; dark grey; @ 174.5 m ... 354°/42°E; limonitic staining throughout
1.38	177.0 - 180.0	COVERED
0.92	180.0 - 182.0	SANDSTONE ... as per interval 172.5 - 177.0 m; @ 181.0 m ... 004°/35°E
4.82	182.0 - 192.5	COVERED and/or FLOODED
0.92	192.5 - 194.5	SANDSTONE; fg; dark grey; Fe staining; @ 192.5 m ... 000°/35°E
1.15	194.5 - 197.0	COVERED and/or FLOODED
(to 200.0 m) 1.38 (@ 200.0+ m) 0.61	197.0 - 201.3	SANDSTONE, fg; dark grey; Fe staining; @ 199.0 m ... 005°/50°E

NOTE: @ "200.0 m" trench bearing becomes 250° AZ

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
18.38	201.3 - 240.5	COVERED and/or FLOODED ... @ H_2O line at bottom of trench @ 228-231 m, there appears to be SLTSTN/MDSTN outcrop ... dips are vertical
	NOTE: from SURVEY REF 4 to "240.5" of TR-83-9 .. 12.0 m @ 000°	
	240.5	End of Trench

FINIS

3/Jc.27

TRENCH TR-83-10 DECLINATION SETTING: 29°30'

(TR-83-10 IS LOCATED APPROXIMATELY PERPENDICULAR TO TR-83-5; TR-83-10 INTERSECTS THE " 75 m" OF TR-83-5; "0" OF TR-83-10 IS LOCATED (PRIOR TO THE DRAG FOLDING NOTED IN TR-83-5) 0.5 m ± FURTHER EAST THAN THE LINE OF TR-83-5

DATE: 1983/07/23-27 MEASURED BY: AW/DWF

TRENCH PARTICULARS LENGTH: 13.0 m
WIDTH: 1 m ±
DEPTH: 2 m ±

INCLINATION: 0°
BEARING: 254° AZ

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.36	0 - 0.4	COAL
1.62	0.4 - 2.2	SILTSTONE; broken, highly folded ... fold axis (minor) @ 1 m ... 170°/65°E; PLUNGE (?) 35° @ 170°
1.00	2.2 - 5.9	COAL; 226°/35°E
2.01	5.9 - 10.0	SILTSTONE/SANDSTONE, fg; hard; blocky, medium to dark grey; @ 9 m ... 345°/35° E
	NOTE: @ 9 m ... middle of loop road ... bearing of trench: 247° AZ	
0.63	10.0 - 11.0	MUDSTONE; med. grey; broken to friable
3.80	11.0 - 17.0	SILTSTONE/SANDSTONE, fg; hard; blocky; med. to dark grey; calcareous, minor coal/carb. material within; 358°/47°E
3.80	17.0 - 23.0	SHALE; med. grey to brown to black; broken to friable; carbonaceous
0.95	23.0 - 24.5	COAL ZONE; TWO 0.30 m coal bands with 0.40 m MDSTN parting @ mid interval
	NOTE: the above interval was flooded; in addition, trench walls were very unstable, therefore, the interval was logged from permanent datum.	
	24.5	End of Trench

FINIS

3/Jc.28

TRENCH TR-83-11 DECLINATION SETTING: 29°30'

(EAST OF LOOP ROAD ON ACCESS ROAD FROM LOG LANDING)

DATE: 1983/07/23-27 MEASURED BY: AW/DWF

TRENCH PARTICULARS LENGTH: 146.0 m
WIDTH: 1 m ±
DEPTH: 2 m ±

INCLINATION: 0°
BEARING: 189° AZ

MEASURED STRAT HIGHER TO LOWER

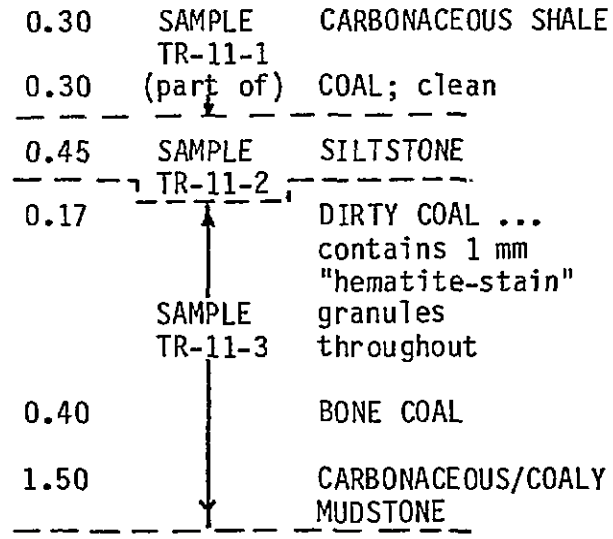
CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
. from survey "Ref. 5" to: " 0" ... 18.8 m @ 325° AZ "35.0" ... 28.6 m @ 233° AZ		
0.47	0 - 1.0	MUDSTONE ... slightly carbonaceous
0.47	1.0 - 2.0	COAL; 335°/57°E
0.19	2.0 - 2.4	MUDSTONE ... carbonaceous
1.71	2.4 - 6.0	SILTSTONE; coaly plant fragments; minor interbedded MUDSTONE throughout; 0.10 m coal @ 4.6 m
1.80	6.0 - 9.8	MUDSTONE; brown to grey
3.41	9.8 - 17.0	MUDSTONE; brown to grey; harder than previous unit; highly broken; minor Fe stone nodules within; @ 13 m ...335°/45°E
0.19	17.0 - 17.4	COALY SHALE
(to 18.0 m) 0.28 (@ 18.0+ m) 1.34	17.4 - 20.0	MUDSTONE; carbonaceous with minor, thin (0.05 - 0.10 m) coaly bands throughout; soft

NOTE: @ "18.0 m", trench bearing changes to 210° AZ

3/Jc.29

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
6.95	20.0 - 30.4	SILTSTONE/SS, fg; hard; calcareous; resistant, medium grey; 335°/50°E @ 21 m; soft carbonaceous zone (0.10 m thick) @ 22.1 m; heavy limonitic stain zone @ 23.3 - 24.0 m; 0.05 m coal bands @ 24.2 and 25.9 m; unit becomes more blocky and massive @ 26.0 - 28.0 m; unit becomes "platy" @ 28.0 - 29.5 m ; 337°/57°E
0.74	30.4 - 31.5	MUDSTONE ... carbonaceous with minor coaly debris; soft
2.34	31.5 - 35.0	SILTSTONE/SANDSTONE, fg
	NOTE: @ "35.0 m" trench bearing changes to 221° AZ	
1.55	35.0 - 37.1	SANDSTONE; hard; medium grey; fg
0.88	37.1 - 38.3	SILTSTONE; dark grey
0.96	38.3 - 39.6	SANDSTONE; fg; minor carbonaceous debris throughout; Fe staining; 330°/58°E
1.77	39.6 - 42.0	SILTSTONE; medium grey; minor MUDSTONE ... slightly carbonaceous throughout
5.30	42.0 - 49.2	MUDSTONE/COALY SHALE ZONE; black to dark brown; @ 46.0 - 46.5 m, dark brown SILTSTONE unit
(to 50.0 m) 0.59 (@ 50.0+ m) 0.39	49.2 - 50.5	SANDSTONE; fg, brown-grey; calcareous; Fe staining; 331°/58°E
	NOTE: @ "50.0 m", trench bearing changes to 230° AZ	
1.23	50.5 - 52.1	SILTSTONE; dark grey; broken
3.35	52.1 - 56.7	COAL ZONE

	APPARENT TH (m)	LITHOLOGY
SAMPLE TR-11-1 (part of)	0.65	COAL ... dull; powdery
	0.45	COAL; hard; bright; clean
	0.25	SHALEY COAL

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
(cont'd)	52.1 - 56.7	

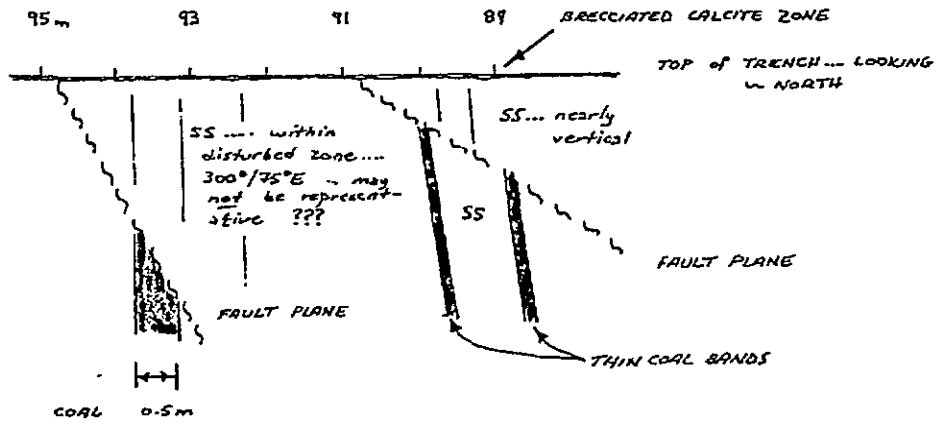
NOTE: The above coal zone was completely flooded with H_2O within 2 hours of excavation.

1.46	56.7 - 58.6	MUDSTONE ... slightly carbonaceous; dark grey; fissile; @ 57 m ... 325°/55°E
1.23	58.6 - 60.2	SHALE; dark grey to black; concoidal fracture, non-calcareous
(to 81.0 m) 16.03 (@ 81.0+ m) 2.27	60.2 - 83.9	SANDSTONE; fg to mg; abundant coalified plant casts; finely laminated; minor, thin (<0.05 m) coal bands throughout; @ 66 m, calcareous; @ 69 m ... 337°/53°E; minor less resistant bands (SILTSTONE and MUDSTONE) especially @ 72.5 - 75.0 m; @ 79 m, calcareous

NOTE: @ "81.0 m", trench bearing changes to 248° AZ

1.18	83.9 - 85.4	COVERED
0.71	85.4 - 86.3	SILTSTONE/MUDSTONE interbedded
2.35	86.3 - 89.3	SANDSTONE; fg, calcareous; highly fractured with calcite infilling in lower 0.2 m
4.31	89.3 - 94.8	FAULT ZONE ... 2 fault planes noted; plane @ 91 m ... 325°/45°E; see sketch

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY



1.96	94.8 - 97.3	MUDSTONE; brown, soft, 0.15 m carbonaceous zone @ 97 m
0.31	97.3 - 97.7	COAL, clean
1.02	97.7 - 99.0+	MUDSTONE ... brown; very soft and pliable
2.44	99.0 - 101.5	SANDSTONE; fg; broken to rubbly; calcite veining and "brecciation"; @ 100.6 m ... 150°/80°W ... dip direction changes in broken zone at top of unit
	NOTE: @ "100.0 m", trench bearing changes to 250° AZ	
0.19	101.5 - 101.7	COAL
1.04	101.7 - 102.8	SILTSTONE ... slghtly carbonaceous; broken; dip direction change ... @ 102.8 m ... 328°/66°E
0.76	102.8 - 103.6	SANDSTONE
1.33	103.6 - 105.0	FAULT ZONE ... appears to be west dipping thrust ... brings SANDSTONE, hard, fg over a COALY/CARB. MUDSTONE unit
2.94	105.0 - 108.1	SANDSTONE; hard; vfg; minor Fe staining
0.66	108.1 - 108.8	CARBONACEOUS MUDSTONE; soft; broken

+ changes in strike/dip @ 99.0 m and 100.0 m

3/Jc.32

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
0.28	108.8 - 109.1	COAL ... dirty at top ... cleaner to base
1.61	109.1 - 110.8	SANDSTONE; fg; grey; 323°/85°E
0.38	110.8 - 111.2	SILTSTONE; slightly carbonaceous; broken
0.85	111.2 - 112.1	SANDSTONE; fg; highly weathered; heavy limonitic staining
1.04	112.1 - 113.2	SILTSTONE; broken to highly fractured
0.85	113.2 - 114.1	COAL; clean; bright; brittle
3.70	114.1 - 118.0	SANDSTONE, fg/SILTSTONE; Fe staining; med. to dark grey; broken in upper interval - platy in lower interval
26.55	118.0 - 146.0	SILTSTONE; brown-grey; highly fractured ... broken to rubbly (breaks consistently into 2 cm x 5 cm x 1 cm polygonal fragments); minor zones of Fe stone nodules; Fe staining; non-calcareous; band of coarser grain sediments @ 127.3 - 128.0 m; @ 131.5 ... 335°/74°E
	NOTE: "146.0" is in middle of West Loop Road.	
	146.0	End of Trench

FINIS

3/Jc.33

TRENCH TR-83-12 (HAND TRENCH ONLY ... ORIGINALLY DESIGNATED AS "MS-83-2")

(LOCATED ON POWER LINE RIGHT OF WAY ... ADJACENT TO 1ST TOWER NORTH OF "LOW ROAD")

DECLINATION SETTING: 29°30'

DATE: 1983/07/20 MEASURED BY: AW/DWF

TRENCH PARTICULARS LENGTH: 62.2 m
WIDTH: not measured
DEPTH: not measured

INCLINATION: 0°
BEARING: 027° AZ

MEASURED STRAT LOWER TO HIGHER

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
. from SW leg of power tower to "0" ... 275° AZ		
1.03	0 - 1.5	CARBONACEOUS SHALE ... coaly debris throughout; @~1.3 m ... 335°/58°E
2.17	1.5 - 4.7	SANDSTONE; fg; plant casts; finely bedded; blocky to platy; med. to dark grey; x-bedding indicates "way-up" to east
1.97	4.7 - 7.6	SHALE; fissile; 333°/57°E; dark brown to grey; minor carbonaceous material
0.68	7.6 - 8.6	COAL;
1.83	8.6 - 11.3	SHALE: dark brown to grey to black; thin, dirty coal band (~0.2m) @~9.5 m
0.48	11.3 - 12.0	SANDSTONE; fg; blocky; 325°/60°E
2.85	12.0 - 16.2	SANDSTONE, fg/SILTSTONE; less resistant than above unit; broken to rubbly; limonitic, fg; sandstone @ 15.2 - 15.5 m; 330°/58°E

3/Jc.34

CALCULATED TRUE TH (m)	INTERVAL (m)	LITHOLOGY
1.22	16.2 - 18.0	MUDSTONE; dark brown; broken to fragmented
6.25	18.0 - 27.2	COVERED
11.41	27.2 - 44.0	SANDSTONE; fg; dark grey to brown; Fe staining; calcareous; coalified plant casts; ripple marks present; hard; x-bedding indicated "way-up" to east; @ 28.5 m ... 332°/50°E; @ 29.5 m ... 333°/55°E
2.92	44.0 - 48.3	COVERED
1.70	48.3 - 50.8	SANDSTONE; fg; dark grey to brown; Fe staining; calcareous; hard; coalified plant casts
2.11	50.8 - 53.9	CARBONACEOUS SHALE with coaly debris throughout; 0.30 m coal @ 50.8 m 0.20 m coal @ 51.9 m
0.41	53.9 - 54.5	SANDSTONE; fg; dark grey; minor Fe staining
1.36	54.5 - 56.5	COVERED
0.34	56.5 - 57.0	MUDSTONE ... carbonaceous
3.19	57.0 - 61.7	COAL ... clean, bright; at footwall ... 335°/57°E
0.34	61.7 - 62.2	MUDSTONE ... silty; med. grey
	62.2	End of Trench ... COVERED @ >62.2 m

NOTE: From SW leg of tower to "62.2" ... 010° AZ

FINIS

3/Jc.35

PINE PASS – 1983:

DRILL HOLE PARTICULARS &

CORE DESCRIPTIONS

CROWS NEST RESOURCES LIMITED

DRILL HOLE PARTICULARS

PROJECT	PINE PASS	DRILLED BY	CANADIAN LONGYEAR
		LOGGED BY	BPB
AREA	N.E. B.C.	SURVEYED BY	WATSON

HOLE NO.	DATE	CO-ORDINATES			GROUND ELEVATION	TOTAL DEPTH	LOGS		CORE INTERVAL	REMARKS *
		REF. LOC.	E	N			GENERAL	DETAIL		
PP83-1	1983/08/23	ZONE 10 (123°)	541 286.91	6 163 419.44	910.40	355.4	Focus E, Neut, Gamma, LSD, Calip Verticality*	Gamma, LSD, BRD, Caliper	11.7-355.4	Az.: 270° Tilt: -65° (avg)
PP83-2	1983/08/28	"	540 996.78	6 162 985.77	977.54	277.7	Focus E, Neutron Gamma, LSD, Calip Verticality*	Gamma, LSD, BRD, Caliper	3.1-277.7	Az.: 240° Tilt: -60° (avg)
				TOTAL: 2	Holes	633.1				
								*Note:	Verticality tool malfunction*	
									Az values are not valid	

CORE DESCRIPTION

02/28/84

HOLE ID PP83D-1
PROJECT PINE PASS
LOG DATE 83/08/25
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
.00	11.70			11.70	0	OB		0.00-11.70 - TRICONED: NO CORE. 0.00-2.0 OVERBURDEN GRAVEL AND TILL. 2.0-11.70 APPARENTLY MOOSEBAR SHALE AS EXPOSED BY 'CAT' WHILE BUILDING DRIL L SITE & SUMP FOR MUD TANKS. VERY FISSILE, DARK GREY TO BLACK, OCCASIONAL IRONSTONE NODULES		
11.70	30.72			19.02	0	SH		DARK GREY TO BLACK, MASSIVE, FRIABLE, SLIGHTLY CALCAREOUS; OCCASIONAL FINEL Y CRYSTALLINE PYRITE BLEBS.	25.20 28.20	64 64
								NOTE: CORE RETRIEVED AS BROKEN TO STICK BUT AFT ER FIVE DAYS IT HAS ALREADY STARTED SLAKING INTO SHARD LIKE PIECES. ESTIMA TE NEAR COMPLETE SLAKING WITHIN A MONTH. 24.38 5CM, LIGHT GREY, SOFT TONST EIN BAND. 25.25-25.60 GLAUCONITIC ZONE		
% OLIVE								(		
2MM DIAMETER) WITHIN								MUDSTONE GIVING A DARK MORE SILTY UNIT THAN MAIN SHALE UNIT. COMMON 1-2CM LIGHT GREY BIOTURBATED SILTY BEDS. SLIGHTLY LARGER PYRITIC BLEBS THAN IN MAIN UNIT. A FEW PEBBLE S UP TO 1CM IN LOWER 10CM		
30.72	33.60			2.88	0	CONG		MEDIUM GREY, PEBBLE ORTHO CONGLOMERATE, HARD, MASSIVE TIGHTLY PACKED 0.5-1. OCM PEBBLES WITH VERY LITTLE MATRIX, HARD (BLUE SKY CONG.)		

CORE DESCRIPTION

02/28/84

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PROJECT PINE PASS
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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
33.60	41.11			7.51	0	SS		FINE GRAINED, LIGHT TO MEDIUM GREY, VERY HARD, CALCAREOUS CARBONACEOUS IN	33.70	72
								LAST 0.14M; FINE BEDDING WITH OCCASIONAL CROSS BEDS (TOP UP)	34.20	65
									39.40	62
41.11	42.00			.89	0	SH		CARBONACEOUS TO COALY, BLACK, BROKEN TO STICK WITH COAL		
								BANDS. 41.11-41.41 COAL HARD BRIGHT; 41.61-41.70 CARBONACEOUS SHALE, DULL, HARD; 41.70-42.00		
								DIRTY COAL HARD, BRIGHT, BROKEN. RECOVERY .20/.30. ABRUPT CONTACT AT BASE		
42.00	42.44			.44	0	SS		FINE GRAINED, MEDIUM TO LIGHT GREY, CARBONACEOUS TO COALY ALONG IRREGULAR		
								BEDDING PLANES, INCREASINGLY CARBONACEOUS TO BASE		
42.44	43.00			.56	94	SH	COALY/CARBONACEOUS	VERY DARK GREY TO BLACK, RECOVERY 0.47/0.50. UPPER 0.10 AND LOWER 0.11M		
								BROKEN TO CRUSHED		
43.00	44.02			1.02	0	SLST		DARK GREY, CALCAREOUS, MINOR BIOTURBATION; BOTTOM CONTACT GRADATIONAL	43.70	60
44.02	48.40			4.38	0	SS		FINE GRAINED, MEDIUM TO DARK GREY, INTERBEDS OF SILTSTONE & VERY FINE GRAIN	46.70	64
								ED SANDSTONE; SHARP COLOUR CONTRAST MARKS BASE OF UNIT. MINOR SOFT SEDIMEN		
								T DEFORMATION, STICK CORE		

CORE DESCRIPTION

02/28/84

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PROJECT PINE PASS
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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
48.40	50.65			2.25	O	MDST	SILTSTONE	BLACK MUDSTONE GRADING INTO DARK GREY SILTSTONE. 49.65-49.80 SOFT SEDIMENT DEFORMATION	49.80	60
50.65	54.54			3.89	O	MDST		CARBONACEOUS TO COALY DULL, BLACK, BROKEN TO STICK, MINOR THIN COAL LENSES AND BANDS THROUGHOUT. 54.20-54.48M DARK GREY, FINE GRAINED SANDSTONE	52.80	59
54.54	56.33			1.79	O	SS	SILTSTONE	FINE GRAINED, MEDIUM GREY CALCAREOUS CALCITE INFILLED FRACTURE @ 54.7M	.	.
56.33	59.05			2.72	O	MDST	CARBONACEOUS SILTSTONE	DULL, BLACK TO DARK GREY; MINOR THIN COALY BANDS/LENSES THROUGHOUT; AT 57.38M, MINOR SANDSTONE INTERBED	58.20	66
59.05	64.00			4.95	O	SLST	SANDSTONE	FINING UPWARD SEQUENCES FROM LIGHT TO MEDIUM GREY, FINE GRAINED SANDSTONE INTO MEDIUM GREY SILTSTONE. MINOR CALCITE FILLED FRACTURES AT 58.35-58.50M STICK TO BROKEN CORE; MINOR SMALL SCALE CROSS BEDS AT 63.2 INDICATE 'RIGHT WAY UP'	62.00	55
64.00	65.04			1.04	O	MDST		CARBONACEOUS, DARK GREY TO BLACK, DULL, MINOR INTERBEDS OF SILTSTONE; BROKEN IN LOWER 0.20M	65.00	61

CORE DESCRIPTION

02/28/84

HOLE ID PP83D-1
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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
65.04	66.04			1.00	0	SS		FINE GRAINED, LIGHT TO DARK GREY, MOTTLED TO SWIRLED APPEARANCE, STICK TO BROKEN	.	.
66.04	66.56		01	.52	77	COAL		RECOVERY! .40/.52; BRIGHT, CLEAN, BROKEN. SEPARATION WITH ROOF, VISUAL AND PHYSICAL - GOOD; WITH FLOOR, VISUAL - POOR, PHYSICAL - FAIR. SAMPLE #1: 66.04-66.56	.	.
66.56	67.44			.88	0	MDST		SLIGHTLY SILTY, DARK GREY TO BLACK, MINOR CARBONACEOUS AND COALY DEBRIS IN UPPER 0.30M; GRADATIONAL INTO NEXT UNIT	.	.
67.44	77.45			10.01	0	SS	SILTSTONE	LIGHT TO DARK GREY, MOTTLED FINE GRAINED, BROKEN TO STICK; ESPECIALLY BROKE N TO RUBBLY AT	68.10	58

.9-73.0M.		74.80	48					
						74.36-77.86 PREDOMINANTLY Y, FINE TO MEDIUM GRAINED; 69.3-74.76M CALCITE VEINING AND FRACTURE FILLING SLICKENSIDED (SMALL FAULT ZONE); 76.3-77.30 MINOR CALCITE FRACTURE INFILLI NG. 71.10-70.93M AND 71.57-71.62M MINOR COAL BANDS	76.80	47
77.45	78.15		.70	31 MDST		BLACK, DULL, SILTY. 77.45-77.84M GROUND TO PULVERIZED. RECOVERY .12/.39		
78.15	79.30		1.15	0 SS	SILTSTONE	MEDIUM TO DARK GREY, FINE GRAINED, MOTTLED IN TOP 0.30M		

CORE DESCRIPTION

02/28/84

HOLE ID PP83D-1
PROJECT PINE PASS
LOG DATE 83/08/25
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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								THEN FINE BEDDED TO MASSIVE. COAL WISPS IN LOWER 0.06M OF UNIT	.	.
79.30	79.96		02	.66	91	COAL		RECOVERY .60/.66; BROKEN, BRIGHT, MODERATELY HARD. SEPARATION WITH ROOF, VISUAL & PHYSICAL - GOOD; WITH FLOOR, VISUAL & PHYSICAL - POOR. SAMPLE #2: 79.30-79.96	79.80	70
79.96	80.22			.26	0	MDST		COALY TO CARBONACEOUS (ESPECIALLY AT TOP). DULL, HARD, BLACK	.	.
80.22	81.60			1.38	0	SLST		GRADING INTO SANDSTONE AT BASE. MEDIUM TO DARK GREY, HARD, STICK CORE	.	.
81.60	85.30			3.70	0	SS		FINE GRAIN, LIGHT TO MEDIUM GREY, FINE BEDDED, HARD, STICK TO BROKEN, OCCAS IONAL SMALL (<0.5CM) MUDSTONE FRAGMENTS. 83.4-84.1M ABUNDANT CALCITE FRACT URE INFILLING ALMOST BRECCIATED ZONE. 84.7-85.2M MINOR CALCITE FILLED FRAC TURES	.	.
85.30	88.74			3.44	0	SS	INTERBEDDED SILTSTONE	MEDIUM TO DARK GREY, FINE GRAINED, STICK, FINE BEDDED. RARE, MINOR CALCITE FILLED FRACTURES	88.40	64
88.74	94.09			5.35	0	MDST		SILTY, DULL BLACK TO BLACK GREY, HARD, MEDIUM GREY SANDSTONE. CALCITE WISP S IN INTERVAL FROM 89.40-89.90	.	.

CORE DESCRIPTION

02/28/84

HOLE ID PP83D-1
PROJECT PINE PASS
LOG DATE 83/08/25
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
94.09	94.14			.05	0	TNST				
94.14	94.64			.50	4	COAL	DIRTY	DULL, HIGH ASH, RECOVERY .02/.50. SEPARATION WITH ROOF, VISUAL - GOOD, PHYSICAL - FAIR		
94.64	94.83			.19	47	COAL		BRIGHT, BROKEN TO RUBBLY; RECOVERY .09/.19		
94.83	95.04			.21	43	SH	COALY	DULL, HARD; RECOVERY.09/.21		
95.04	95.16			.12	17	COAL		BRIGHT TO DULL, BROKEN TO RUBBLY; RECOVERY .02/12		
95.16	95.76			.60	75	MDST	CARBONACEOUS	HARD, BROKEN TO STICK, MINOR COAL DEBRIS AND CALCITE INFILLING TO BASE OF INTERVAL; RECOVERY .45/.60		
95.76	95.86			.10	50	COAL		CLEAN, BRIGHT, BROKEN; RECOVERY .05/.10		
95.86	97.18			1.32	76	MDST	CARBONACEOUS	DULL, HARD, GROUND TO PULVERIZED AT .15 TO .43M ABOVE BASE OF CORE RECOVERED, MINOR CALCITE INFILLING, MINOR COALY DEBRIS ESPECIALLY AT BASE OF UNIT; RECOVERY .87/1.15		
97.18	97.34			.16	0	SH	COALY	DULL TO BRIGHT, THIN COAL		

CORE DESCRIPTION

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								LENSES THROUGHOUT		
97.34	97.50			.16	0	MDST	CARBONACEOUS	DULL, HARD, BROKEN		
97.50	98.14		03	.64	100	COAL		BRIGHT, CLEAN, BROKEN TO PULVERIZED; RECOVERY .64/.64. SEPARATION WITH ROO		
								F, VISUAL AND PHYSICAL - FAIR; WITH FLOOR, VISUAL AND PHYSICAL - FAIR.		
								SAMPLE #3: 97.50-98.14		
98.14	98.56			.42	0	SS		WITH THIN SILTY MUDSTONE		
								INTERBEDS, LIGHT TO DARK GREY, CALCITE FRACTURE IN		
								FILLING THROUGHOUT		
98.56	102.54			3.98	0	MDST	SILTY MUDSTONE	DARK GREY TO BLACK, BROKEN TO STICK, WISPY CALCITE	101.20	60
								THROUGHOUT, SANDSTONE LE		
								NSE 100.07-100.22M; CALCITE BAND AT 100.85-100.87		
102.54	103.32			.78	55	COAL		102.54-102.78M COAL: RECOVERY .08/.24; HARD, BRIGHT BROKEN. SEPARATION WIT	102.20	65
								H ROOF, VISUAL & PHYSICAL - POOR. 102.78-102.94 COALY SILTSTONE: RECOVERY		
								.05/.16; DARK GREY TO BLACK,		
								COALY WISPS/BLEBS THROUGHOUT. 102.94-103.32		
								COAL: RECOVERY .30/.38; HARD, BRIGHT, BROKEN. SEPARATION		
								WITH FLOOR, VISUA		
								L & PHYSICAL - POOR		
103.32	104.08			.76	34	MDST	SHALE	CARBONACEOUS TO COALY, DULL,		

CORE DESCRIPTION

02/28/84

HOLE ID PP83D-1
PROJECT PINE PASS
LOG DATE 83/08/25
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								BLACK WITH MINOR BRIGHT, COALY DEBRIS (ROOTS).		
								103.32-103.84 RECOVERY .24/.52 MUDSTONE. 103.84-104.08 RECOVERY .02/.24 SH ALE	.	.
104.08	106.20			2.12	0	MDST	SILTY	DARK GREY TO BLACK, FINE, WISPY CALCITE THROUGHOUT BOTTOM .50M; MINOR COALY LENSES/WISPS IN UPPPER .60M	104.70	62
106.20	110.24			4.04	0	SS	SILTSTONE	MEDIUM TO DARK GREY INTERBEDS SILTSTONE AND FINE GRAINED SANDSTONE, STICK T O BROKEN, SHALEY IN BOTTOM 1.0M	109.80	64
110.24	111.36		04	1.12	89	COAL		HARD, BRIGHT, CLEAN; RECOVERY 1.00/1.12. SEPARATION WITH ROOF, VISUAL - FA IR, PHYSICAL - POOR; WITH FLOOR VISUAL - GOOD, PHYSICAL - FAIR. SAMPLE #4: 110.24-111.36	.	.
111.36	111.43			.07	100	TNST		FINE GRAINED, MEDIUM GREY, FLAKEY, SOFT, COALY DEBRIS THROUGHOUT	.	.
111.43	111.69			.26	100	COAL		BRIGHT, CLEAN	.	.
111.69	111.88			.19	100	TNST		AS ABOVE	.	.
111.88	112.15			.27	59	COAL		BRIGHT, BROKEN, RECOVERY .16/.27. SEPARATION WITH	.	.

CORE DESCRIPTION

02/28/84

HOLE ID PP83D-1
PROJECT PINE PASS
LOG DATE 83/08/25
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								FLOOR, VISUAL & PHYSICAL - FAIR	.	.
112.15	112.48			.33	0	SH		DULL, BLACK WITH BRIGHT COALY LENSES MORE ABUNDANT IN LOWER HALF	.	.
112.48	113.99			1.51	0	MDST		DARK GREY TO BLACK, BROKEN TO STICK, MINOR THIN COALY BANDS THROUGHOUT. 113.2-113.4: 0.20M BUFFY COLOURED MUDSTONE; HIGH DENSITY	113.80	66
113.99	115.52			1.53	0	SH	CARBONACEOUS	BLACK, DULL, SLIGHTLY SILTY WITH MINOR COAL BANDS THROUGHOUT. 113.99-114.0 6 COAL: RECOVERY .05/.08; BROKEN, BRIGHT, HARD. 114.94-115.08 COAL: RECOVE RY .07/.14; AS ABOVE	115.00	55
115.52	115.96			.44	45	COAL		HARD, BRIGHT TO DULL, BROKEN, RECOVERY .20/.44. SEPARATION WITH ROOF AND FLOOR, VISUAL AND PHYSICAL - POOR	.	.
115.96	116.26			.30	50	SH		RECOVERY .15/.30; COALY TO CARBONACEOUS BECOMING LESS CARBONACEOUS TO BASE	116.80	55
116.26	132.58			16.32	0	SLST	MUDSTONE/SANDSTONE	MEDIUM TO DARK GREY MOTTLED SILTSTONE, INTERBEDDED WITH MEDIUM TO LIGHT GRE Y, FINE GRAINED SANDSTONE AND BLACK CARBONACEOUS MUDSTONE. BIOTURBATION EV IDENT THROUGHOUT, BROKEN TO STICK, MINOR CALCITE FRACTURE INFILLING THROUGH OUT. MINOR COALY DEBRIS AT	122.90 129.00	52 46

CORE DESCRIPTION

02/28/84

HOLE ID PP83D-1
PROJECT PINE PASS
LOG DATE 83/08/25
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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.

9.40, 121.30, 123.35,						OM 0.20M VERY LIGHT GREY SOFT FINE GRAINED, MAY BE TONSTEIN.		
132.58	133.44	05	.86	93	COAL	RECOVERY .80/.86; BRIGHT, HARD, BROKEN TO CRUSHED. SEPARATION WITH ROOF,		
						VISUAL & PHYSICAL - FAIR; WITH FLOOR, VISUAL & PHYSICAL - POOR. SAMPLE #5: 132.58-133.44		
133.44	133.78		.34	59	SH COALY	RECOVERY .20/.34; DULL, BLACK, DECREASING COAL CONTENT TOWARDS BASE. GRADA TIONAL BOTTOM CONTACT		
133.78	140.70		6.92	0	MDST SILTSTONE		138.20	53
						BLACK TO MEDIUM GREY, MOSTLY STICK CORE, VERY GRADATIONAL FROM SILTY MUDSTO		
						NE AT TOP INTO FRIABLE CLEAN MUDSTONE NEAR MIDDLE THEN INTO SILTSTONE TOWAR		
						DS BASE. MINOR BIOTURBATION IN SILTIER ZONES. BOTTOM CONTACT WITH NEXT UN		
						IT ALSO VERY GRADATIONAL		
140.70	157.92		17.22	0	SS	GRAIN SIZE VARIES FROM VERY FINE GRAINED TO MEDIUM GRAINED	144.20	56
						GENERAL COARSENI NG DOWNWARD UNIT. COLOUR VARIES SIMILARILY FROM MEDIUM TO DARK GREY NEAR T	147.30	59
						OP TO LIGHT GREY TOWARDS BASE. MINOR CALCITE INFILLING	151.60	63

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								THROUGHOUT. CALCAR EOUS, STICK CORE, GENERALLY	.	.
								FINE BEDDED WITH COMMON COALY/CARBONACEOUS LAMI NATIONS. 149.60-156.30	.	.
								OCCASAIONAL MINOR BANDS/WISPS OF COAL. 150.40-150. 72 152.84-153.00 157.79-157.92	.	.
								- SANDSTONE CONTAINS ABUNDANT DARK GREY, ROU NDED SILTSTONE FRAGMENTS (RIP	.	.
								UP CLASTS). TOP CONTACT VERY GRADATIONAL, BO TTOM CONTACT VERY ABRUPT	.	.
157.92	158.14			.22	0	SS		VERY FINE GRAINED, BUFFY DARK GREY, HARD	.	.
158.14	176.40			18.26	0	MDST	SILTSTONE	DARK GREY TO BLACK,	.	.
								CALCAREOUS, BROKEN TO STICK, VERY MINOR CALCITE FRACTU RE INFILLING THROUGHOUT.	.	.
								158.14-159.80 MINOR COALY DEBRIS, MOSTLY ALONG VE RY SMOOTH SLICKENSIDED	.	.
								FRACTURES. MINOR BIOTURBATION THROUGHOUT WITH SOFT SEDIMENT SLUMPING IN TOP 5.0M	.	.
176.40	186.16			9.76	0	MDST	COALY SHALE	SILTY MUDSTONE AT TOP BECOMING COALY SHALE DOWN SECTION, DARK GREY TO BLACK	179.90	70
								DULL, BROKEN TO STICK,	184.70	71
								COALY/CARBONACEOUS DEBRIS THROUGHOUT BUT INCREASING TOWARDS BASE. MINOR CALCITE	186.00	68
								FRACTURE INFILLING THROUGHOUT. MINOR BIOTURBA TION AT 185.75. ABUNDANT	.	.
								COALY BANDS 182.7-186.16		
186.16	187.04		06	.88	68	COAL		RECOVERY .60/.88; HARD,	.	.

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								BRIGHT, BROKEN TO CRUSHED. SEPARATION WITH ROOF, V		
								ISUAL & PHYSICAL - FAIR; WITH FLOOR, VISUAL & PHYSICAL - POOR. SAMPLE #6:	.	.
								186.16-187.04	.	.
187.04	187.96			.92	80	SH	COALY	RECOVERY .75/.94; BLACK TO	187.60	71
								DARK BROWNISH GREY, BROKEN TO RUBBLE, COAL BANDS		
								AND DEBRIS THROUGHOUT. 187.48-187.56 COAL: RECOVERY	.	.
								.05/.08		
187.96	188.44			.48	0	LC		PROBABLY COAL GROUND BY DRILLER	.	.
188.44	189.80			1.36	0	SH	COALY/CARBONACEOUS SILTST	AS FROM 187.04-187.96; COALY WISPS THROUGHOUT LOWER CONTACT	.	.
								GRADATIONAL		
189.80	190.12		07	.32	100	COAL		RECOVERY .32/.32; HARD, BRIGHT, CLEAN. SEPARATION	.	.
								WITH ROOF AND FLOOR, VIS		
								UAL AND PHYSICAL - VERY POOR. SAMPLE #7: 189.80-190.12	.	.
190.12	190.34			.22	0	SH	COALY SHALE	ABUNDANT COALY MATERIAL DULL TO BRIGHT. MINOR CALCITE FRACTURE INFILLING 1	.	.
								N MID UNIT	.	.
190.34	202.70			12.36	0	SLST	/MUDSTONE/MINOR SANDSTONE	DULL, DARK GREY TO BLACK, STICK TO BROKEN, FRIABLE IN LOWER 1.0M. MINOR CA	193.00	75
								LCITE FRACTURE INFILLING AND	.	.
								COALY WISPS THROUGHOUT. BIOTURBATED AT 192.2		
								AND 193.5M. 195.9-196.2 COAL ZONE (NO RESPONSE ON	.	.
								GAMMA/DENSITY LOGS?).		

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
190.34	202.70			12.36	0	SLST	/MUDSTONE/MINOR SANDSTONE	202.70 - BOTTOM CONTACT ABRUPT	.	.
202.70	204.63			1.93	0	SS		BROKEN TO RUBBLE. 202.7-203.75 LIGHT GREY, FINE TO MEDIUM GRAINED, HARD, SILCEOUS, COALY/CARBONACEOUS LAMINATIONS MORE PREDOMINANT TO BASE; ABUNDANT 1-2MM SHARD-LIKE FRAGMENTS BLACK MUDSTONE. 203.75-204.74 DARK GREY TO BLA CK, FINE GRAINED, VERY MINOR COALY WISPS	.	.
204.63	205.50			.87	0	MDST		SILTY, DARK GREY TO BLACK, STICK TO BROKEN, MINOR COALY DEBRIS THROUGHOUT	.	.
205.50	213.30			7.80	0	SLST	/MUDSTONE/SANDSTONE	NON DESCRIPT UNIT OF SILTSTONE WITH INTERBEDS OF MUDSTONE & SANDSTONE. TOP HAS SLIGHLY MORE SAND WHILE BOTTOM TENDS TO HAVE MORE MUDSTONE INTERBEDS. DARK GREY, CALCAREOUS, STICK TO BROKEN, MINOR COALY BLEBS THROUGHOUT. MINO R BIOTURBATION THROUGHOUT. 205.7: 0.05M ZONE WITH ABUNDANT WISPY CALCITE. AT 209.1M; SMALL CROSS BEDS INDICATE 'RIGHT WAY UP'	.	.
213.30	214.10			.80	18	COAL		RECOVERY 0.14; BRIGHT TO DULL, HIGH ASH, POOR RECOVERY	.	.
214.10	216.58			2.48	0	SLST	/MUDSTONE	DARK GREY TO BLACK COALY IN UPPER 0.30M AND LOWER 0.10M WITH OCCASIONAL COA LY WISPS THROUGHOUT, CALCAREOUS	214.40 216.60	74 75

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
216.58	217.46		08	.88	100	COAL		RECOVERY .88/.88; BRIGHT, CLEAN, BROKEN; AT 0.15M FROM BASE OF COAL TONSTEIN. SEPARATION WITH ROOF AND FLOOR, VISUAL AND PHYSICAL - POOR. SAMPLE #8: 216.58-217.46	.	.
217.46	217.96			.50	0	SH	COALY	BLACK, DULL, HARD, MINOR COALY WISPS AND BLEBS THROUGHOUT BUT GENERALLY DEC REASING TO BASE	217.50	80
217.96	219.60			1.64	0	SLST		DARK TO MEDIUM GREY, MINOR SANDSTONE INTERBEDDDED, UPPER AND LOWER CONTACTS GRADATIONAL, CALCAREOUS	.	.
219.60	221.41			1.81	0	MDST		CARBONACEOUS TO COALY; BLACK, DULL WITH COMMON COALY LENSES. TOP AND BOTTO M CONTACTS GRADATIONAL	.	.
221.41	224.60			3.19	0	SLST	/SANDSTONE INTERBEDDED	MEDIUM GREY, FINE GRAINED SANDSTONE INTERBEDDED WITH DARK GREY SILTSTONE; BROKEN TO STICK, GRADATIONAL CONTACTS. 223.1-223.4 WORM BURROWING DRAGGING SANDSTONE DOWN INTO MUDSTONE	223.50	64
224.60	226.22			1.62	0	MDST		DARK BROWNISH GREY TO BLACK, DULL, STICK TO BROKEN. AT APPROX 226.3M ... TONSTEIN (?), BLACK WITH LIGHT GREY FLECKS, SOFT	226.60	82

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
226.22	229.04		09/10	2.82	57	COAL		SAMPLE #09 227.16-227.46. SAMPLE #10 227.46-229.04. 226.22-227.16 LOST CO RE (COAL?). 227.16-227.46 COALY SHALE: RECOVERY .05/.30; BLACK, DULL WITH ABUNDANT COALY SLICKENSIDES. 227.46-229.04 COAL: RECOVERY 1.55/1.58; HARD, BRIGHT, CRUSHED TO STICK. SEPARATION WITH ROOF ?; WITH FLOOR VISUAL AND PHYSICAL - POOR		
229.04	243.90			14.86	0	MDST		SLIGHTLY SILTY, DARK BROWNISH GREY TO BLACK, MINOR COAL LENSES/BLEBS THROUG HOUT. STICK WITH MINOR BROKEN ZONES, CALCAREOUS; SLICKENSIDES IN UPPER 0.3 OM; INCREASING SILT AND SANDSTONE INTERBEDS TOWARDS BOTTOM	243.10	70
243.90	245.84			1.94	0	SS		MEDIUM GREY, FINE GRAINED WITH INTERBEDDED DARK GREY SILTSTONE; STICK CORE, BIOTURBATED THROUGHOUT		
245.84	247.67			1.83	0	SH	COALY/MUDSTONE	BLACK, DULL WITH COMMON SHINY COAL LENSES; APPROX 0.03M LIGHT GREY SILTSTON E, NEAR BOTTOM OF UNIT	246.20	62
247.67	251.48			3.81	0	SS	SILTSTONE	MEDIUM GREY, FINE GRAINED SANDSTONE GRADING DOWN INTO DARK GREY SILTSTONE; MOSTLY STICK CORE, BIOTURBATED THROUGHOUT	247.90	68

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
251.48	253.39			1.91	0	SH	COALY	BLACK, DULL TO BRIGHT WITH INTERBEDDED SMALL COAL SEAMS. 251.48-251.64: RE COVERY .16/.16. 251.88-251.98 COAL: RECOVERY .03/.10. 252.20-252.30 COAL: RECOVERY .06/.10. 252.94-253.12 COAL: RECOVERY .18/.18		
253.39	254.90			1.51	0	MDST		SLIGHTLY SILTY; DARK GREY TO BLACK, DULL, SILTIER ZONES ARE CALCAREOUS; BROKEN TO STICK, MINOR COALY LENSES IN UPPER HALF OF UNIT; .08M OF DARK BRO WN, HARD SANDSTONE WITH CALCITE FRACTURE INFILLING AT 0.02M FROM BOTTOM	254.10	64
254.90	255.74		11	.84	99	COAL		RECOVERY 0.83; BRIGHT, MEDIUM HARD, CLEAN, BROKEN TO CRUSHED. SEPARATION WITH ROOF, VISUAL - FAIR, PHYSICAL - GOOD; WITH FLOOR, VISUAL - FAIR, PHYSI CAL - GOOD. SAMPLE #11: 254.90-255.74		
255.74	256.93			1.19	0	MDST		BLACK TO DARK GREY, MINOR COALY BLEBS IN UPPER HALF GRADES INTO NEXT UNIT		
256.93	269.20			12.27	0	SS		MEDIUM GREY, FINE GRAINED, CALCAREOUS, BROKEN TO STICK. 256.93-262.50: MAS SIVE WITH COMMON CALCITE INFILLED FRACTURES. 260.50 VOID WITH SPAR-LIKE CA LCITE CRYSTALS. 261.10-261.50 COALY SHALE. 262.50-266.70 HIGHLY DISTURBED ZONE (FAULT ZONE?); DISTURBED AND CONTORTED WITH ABUNDANT	266.80	40

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								IRREGUALR CALCITE FRACTURE INFILLING. INCLUDES SEVERAL VERY SMOOTH SLICKENSIDED SURFACES AT APPROX 10-20 DEGREES TO CORE AXIS. NO LARGE MOVEMENT APPARENT BUT MUCH STR AIN AND SMALL MOVEMENT	. .	. .
269.20	271.30			2.10	O	SH	COALY	DULL TO BRIGHT, BROKEN TO FRIABLE, SLICKENSIDED. 269.66-270.05 SANDSTONE, MEDIUM TO DARK GREY, VERY FINE GRAINED	. .	. .
271.30	290.78			19.48	O	SS	SILTSTONE	DARK GREY, CALCAREOUS WITH OCCASIONAL LIGHT GREY AND BLACK INTERBEDS; MOSTL Y FINE GRAINED SANDSTONE BUT BECOMES SILTIER IN MID SECTION; ABUNDANT IRREG ULAR CALCITE FRACTURE INFILLING 273.8-277.0M AND 283.0-284.0M, COMMON VERY SMOOTH SLICKENSIDED SURFACES. LIGHT BIOTURBATION IN SILTIER ZONES. MINOR COAL WISPS AND LENSES THROUGHOUT. 287.60-288.30 COAL/SILTSTONE: RECOVERY .55/.70; WISPY CALCITE VIENING THROUGHOUT. 290.78 GRADES INTO NEXT UNIT	284.00	70 . . . . .
290.78	299.50			8.72	O	MDST		MINOR SILTSTONE INTERBEDS; DARK GREY TO BLACK, CARBONACEOUS, BROKEN, MINOR CALCITE FRACTURES INFILLING, BIOTURBATED IN TOP 3.0M. 294.4-294.5M LIGHT GREY FINE GRAINED SANDSTONE. INCREASING SILT CONTENT IN LAST 1.0M	. . . . .	. .
299.50	301.20			1.70	O	SS		FINE GRAINED, LIGHT GREY WITH	. .	. .

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								INTERBEDDED DARK GREY TO BLACK SILTY MUDSTONE		
								EVIDENCE OF SOFT SEDIMENT DEFORMATION	.	.
301.20	303.20			2.00	0	MDST		WITH MINOR SILTSTONE; DARK GREY TO BLACK, STICK TO RUBBLY; LOWER 0.8M RUBBL	300.10	75
								Y WITH NUMEROUS THIN COALY BANDS	303.10	74
303.20	309.50			6.30	0	SS		FINE GRAINED, MEDIUM GREY, FINELY CROSS BEDDED (RIGHT WAY UP), VERY MINOR	306.20	75
								BIOTURBATION	.	.
309.50	310.05			.55	42	COAL		RECOVERY .23M; HARD, BRIGHT, BROKEN. SEPARATION WITH ROOF	.	.
								AND FLOOR, VISUAL AND PHYSICAL - POOR	.	.
310.05	312.83			2.78	0	SH	MUDSTONE	COALY AND CARBONACEOUS, BLACK, DULL, BROKEN, WITH MINOR SANDSTONE. 310.05-	312.50	70
								-310.25 COALY SHALE, COMMON COALY WISPS. AT 310.25, 0.04M BAND CLEAN PYRIT	.	.
								E. 310.29-311.00 DARK GREY, FINE GRAINED SANDSTONE. 311.60-312.83 PREDOMI	.	.
								NANTLY MUDSTONE	.	.
312.83	317.80			4.97	0	SS		FINE GRAINED, MEDIUM GREY, CALCAREOUS WITH INTERBEDDED	.	.
								SILTSTONE, GRADES IN TO SILTY MUDSTONE THROUGH LAST 0.8M	.	.
317.80	320.38		12	2.58	48	COAL		SEPARATION WITH ROOF, VISUAL	318.80	76

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								AND PHYSICAL - FAIR; WITH FLOOR, VISUAL AND PHYSICAL - POOR. 317.80-318.48 COAL: RECOVERY .38/.68; GROUND TO PULVERIZ ED. SEPARATION WITH ROOF, VISUAL AND PHYSICAL - FAIR. 318.48-318.82 LOST CORE (PARTING). 318.82-320.38 COAL: RECOVERY .87/1.56; BRIGHT, BROKEN TO RUBBLY, HARD. SEPARATION WITH FLOOR, VISUAL AND PHYSICAL - POOR. SAMPLE #12: 317.80-320.38		
320.38	329.24			8.86	0	MDST		BLACK, BROKEN TO STICK, SILTIER TOWARDS BOTTOM. OCCASIONAL COAL BANDS (TO 0.10M) THROUGHOUT. VERY MINOR CALCITE FRACTURE INFILLING	324.90 328.00	74 70
329.24	339.80			10.56	0	SS	SILTSTONE	INTERBEDDED FINE GRAINED SANDSTONE AND SILTSTONE, MEDIUM TO DARK GREY, BIOT URBATED. 339.4-339.8 LIGHT GREY SANDSTONE BED	331.00 334.10	70 70
339.80	342.00			2.20	0	MDST		SLIGHTLY SILTY, BLACK, DULL, WISPY CALCITE THROUGHOUT, OCCASIONAL COALY LEN SES		
342.00	344.04			2.04	0	SS	SILTSTONE	SANDY UNIT GRADING DOWN TO SILTSTONE AT BOTTOM. MINOR COALY/CARBONACEOUS M ATERIAL THROUGHOUT LOWER 0.04M, VERY COALY		
344.04	344.94		13	.90	89	COAL		SEPARATION WITH ROOF, VISUAL		

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								AND PHYSICAL - FAIR. 344.04-344.36 COAL: CLEAN, BRIGHT, RECOVERY .22/.32. 344.36-344.94 COALY SHALE/COAL: RECOVERY .58/.58: INTERBEDDED COAL AND COALY SHALE. SAMPLE #13: 344.04-344.94	.	.
344.94	352.38			7.44	0	SLST	MUDSTONE	MEDIUM TO DARK GREY, MINOR BLACK UNITS, MINOR COALY/CARBONACEOUS MATERIAL THROUGHOUT. 345.58-345.84 COAL: RECOVERY .06/.26; HARD, BRIGHT, BRITTLE	346.00	74
352.38	355.40			3.02	0	SS		LIGHT GREY, FINE TO MEDIUM GRAINED, COMMON COALY WISPS AND BLEBS. SANDSTONE GRADES FROM FINE GRAINED DARK GREY NEAR TOP INTO LIGHT GREY DOWN SECTION.	352.40	65
									354.00	67
								TOTAL DEPTH AT 355.40	.	.

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
.00	3.10			3.10	0			NOTE: THE GEOPHYSICAL LOG	.	.
								DEPTH TRACKS AND THE MARKER BLOCK DEPTHS DID NOT MATCH FOR THIS HOLE. IT APPEARS THAT THE DIFFERENCE IS	.	.
								APPROXIMATELY 0.5M TO 0.7M. THIS IS PROBABLY DUE TO THE DRILLERS MEASURING FROM THE TOP OF TH	.	.
								E CASING AND THE LOGGER FROM THE DRILL FLOOR. THEREFORE TO COREECT THE "LOG DEPTHS" TO MATCH THE "MARKER	.	.
								BLOCK DEPTHS" ADD 0.6M	.	.
								0.00-3.10 LOST CORE - TRICONED FROM SURFACE TO SET CASING.	.	.
								NOTE: CASING EXTENDED TO 4.6M AT A LATER DATE	.	.
3.10	11.40			8.30	0	SLST	MUDSTONE	DARK GREY SILTSTONE WITH MINOR MUDSTONE; CALCAREOUS, BROKEN, SLIGHTLY COARS	9.40	80
								ER GRAINED TOWARDS BOTTOM. 3.1-4.8 HEAVILY WEATHERED (NEAR SURFACE EFFECT) RUBBLE APPROX 50% RECOVERED.	11.00	78
								9.8-10.0 MODERATELY BIOTURBATED. 11.2-11.4 RUBBLY MUDDY ZONE WITH COAL BLOOM	.	.
11.40	14.20			2.80	0	SS		LIGHT GREY, FINE TO MEDIUM GRAINED, FINE BEDDED,	14.00	74
								CALCAREOUS, COMMON COAL WI SPS IN BOTTOM 0.50M, SHARP CONTACTS ABOVE AND BELOW	.	.
14.20	18.60			4.40	0	MDST		DARK GREY TO BLACK, DULL WITH MINOR SILTSTONE AND SHALE ZONES; FRIABLE TO	.	.
								FISSILE THROUGHOUT.	.	.

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								GRADATIONAL FROM SILTIER NEAR TOP TO SHALEY NEAR BOTTOM		
								; LOWER 0.20M VERY CARBONACEOUS TO COALY.	.	.
18.60	19.34			.74	14	COAL		RECOVERY .10M (14%) BRIGHT, HARD, BROKEN. NO SAMPLE TAKEN	.	.
19.34	25.80			6.46	0	SLST	MUDSTONE	DARK GREY, MASSIVE, BROKEN TO STICK, CALCAREOUS IN BOTTOM HALF. 22.0-23.4	23.20	76
								CARBONACEOUS TO COALY,	.	.
								MUDSTONE WITH MINOR COAL WISPS. AT 25.0, 0.05M LIGH		
								T GREY SANDSTONE LENS	.	.
25.80	26.20		01	.40	100	SH		BLACK, DULL, FISSILE,	26.20	80
								CARBONACEOUS TO VERY COALY AT BASE.		
								RECOVERY 0.40M (100%). SAMPLE #1: 25.80-26.20	.	.
26.20	27.47		02	1.27	100	COAL		RECOVERY 1.27M (100%) BRIGHT, HARD, BROKEN TO STICK, SMALL HIGHER ASH BAND	.	.
								AT 0.40 FROM TOP. TONSTEIN AT 127.22M 1CM, LIGHT BUFFY GREY, SOFT, FLAKY,	.	.
								SHARP CONTACTS. SEPARATION	.	.
								WITH ROOF, VISUAL - FAIR, PHYSICAL - FAIR TO		
								POOR; WITH FLOOR, VISUAL - GOOD, PHYSICAL - POOR. SAMPLE	.	.
								#2: 26.20-27.47		
27.47	28.05			.58	90	COAL		27.47-27.58 TONSTEIN AS ABOVE.	.	.
								27.58-27.74 COAL, RECOVERY		
								0.10M (63%) HARD		
								, BRIGHT. 27.74-27.92	.	.
								TONSTEIN AS ABOVE WITH 0.02M MUDSTONE AT TOP AND 1CM		
								COALY SPLIT IN MIDDLE.	.	.

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								27.92-28.05 COAL, RECOVERY 0.13M (100%) BRIGHT, RU		
								BBLY. SEPARATION WITH FLOOR, VISUAL & PHYSICAL - POOR	.	.
28.05	29.60			1.55	O	SH	COALY/CARBONACEOUS	BLACK, DULL, SMALL COAL BANDS NEAR THE TOP NOT RECOVERED	.	.
29.60	29.81			.21	O	LC		COAL?	.	.
29.81	34.20			4.39	O	SLST		MEDIUM GREY, BROKEN TO STICK, MINOR SANDSTONE AND MUDSTONE INTERBEDS, GRADA	32.00	68
								TIONAL THROUGHOUT, CALCAREOUS,	.	.
								VERY MINOR CALCITE FRACTURE INFILLING THROUG		
								HOUT	.	.
34.20	35.60			1.40	O	SS		MEDIUM GREY, FINE GRAINED,	35.00	73
								HARD, STICK TO BROKEN, CALCAREOUS, BIOTURBATED		
								IN LOWER 0.80M, GRADATIONAL INTO NEXT UNIT	.	.
35.60	43.60			8.00	O	SLST	MUDSTONE	GRADATIONAL UNIT FROM MUDDY SILTSTONE AT TOP TO SILTY MUDSTONE AT BOTTOM.	38.10	66
								MEDIUM TO DARK GREY, BROKEN TO STICK, CALCAREOUS, MINOR BIOTURBATION THROU	.	.
								HOUT. VERY FRIABLE MUDSTONE	.	.
								ZONE AT 1.7-1.0M FROM BOTTOM. LOWER 0.10M INC		
								LUDES A COAL LENS AND ABUNDANT CALCITE FRACTURE INFILLING	.	.
43.60	44.75			1.15	O	IRST		MEDIUM GREY, VERY FINE GRAINED TO APHANITIC, VERY HARD;	.	.
								CALCAREOUS THROUGHO		

CORE DESCRIPTION

02/28/84

HOLE ID PP83D-2
PROJECT PINE PASS
LOG DATE 83/08/30
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
43.60	44.75			1.15	0	IRST		UT WITH ABUNDANT CALCITE FRACTURE INFILLS; TOP 0.08M FINE GRAINED WITH COAL WISPS. COAL DEBRIS AT BOTTOM CONTACT MAY INDICATE A COAL LENS GROUND DURI NG DRILLING		
44.75	47.96			3.21	0	MDST	SILTSTONE	MEDIUM TO DARK GREY SILTY MUDSTONE AND SILTSTONE, GENERALLY FINING DOWNWARD ; CALCAREOUS, STICK TO BROKEN. AT 47.80-47.96 TONSTEIN: LIGHT GREY, SOFT, FLAKY, VERY MINOR COAL DEBRIS		
47.96	48.21			.25	0	LC			47.40	66
48.21	49.59		03	1.38	85	COAL		RECOVERY 1.17M (85%) HARD, BRIGHT, BROKEN. SEPARATION WITH ROOF, VISUAL - VERY GOOD, PHYSICAL - GOOD; WITH FLOOR, VISUAL - FAIR, PHYSICAL - POOR. SAMPLE #3: 48.21-49.59		
49.59	53.50			3.91	0	MDST	COALY/CARBONACEOUS	BLACK, DULL, BROKEN TO RUBBLE WITH ABUNDANT COAL LENSES, INCREASINGLY ABUND ANT DOWN SECTION		
53.50	56.25			2.75	0	SS		FINE GRAINED, MEDIUM GREY, FINE BEDDED, WISPY CALCITE THROUGHOUT; VERY MINO R SOFT SEDIMENT SLUMPING AND MINOR BIOTURBATION THROUGHOUT	55.50	80

CORE DESCRIPTION

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HOLE ID PP83D-2
PROJECT PINE PASS
LOG DATE 83/08/30
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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
56.25	61.55			5.30	O	MDST		WITH MINOR SILTSTONE AND SHALE; DARK GREY AND BLACK, BROKEN, SLIGHTLY CALCA REOUS (ESPECIALLY IN COARSER ZONES). 57.6-58.2 MEDIUM GREY SILTSTONE TO FI NE GRAINED SANDSTONE; BOTTOM 1.0M VERY COALY WITH COAL ALONG SLICKENSIDED F RACTURES AND IN OCCASIONAL LENSES	56.30 59.10 59.70	56 72 68
61.55	74.00			12.45	O	SLST		WITH MINOR MUDSTONE AND FINE GRAINED SANDSTONE INTERBEDDED; MEDIUM TO DARK GREY; MOSTLY BROKEN WITH OCCASIONAL STICK AND RUBBLE ZONES, CALCAREOUS MINO R CALCITE FRACTURE INFILLING THROUGHOUT. AT 63.5M CROSS BEDDING INDICATES 'RIGHT WAY UP'. 63.5-65.0 MINOR BIOTURBATION. 69.0-72.0 COALY MUDSTONE Z ONE, RUBBLY, SLICKENSIDED. AT 72.95 WISPY BLEBS OF DARK GREENISH GREY INCLU SIONS WITH A BLACK STREAK.	63.70 68.70	74 84
74.00	77.42			3.42	O	SH	COALY	BOTTOM 0.20M MUDDY, CARBONACEOUS BLACK, FISSILE TO FRIABLE, ABUNDANT COALY LENSES & WISPS, CALCITE FRACTURE INFILLING THROUGHOUT		
77.42	93.20			15.78	O	SLST	MUDSTONE INTERBEDDED	MOSTLY MEDIUM TO DARK GREY WITH OCCASIONAL BLACK AND LIGHT GREY ZONES; BROK EN TO STICK; CALCAREOUS, OCCASIONAL COAL LENSES THROUGHOUT, GENERALLY MORE MUDSTONE TOWARDS BOTTOM.	87.00	80

CORE DESCRIPTION

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HOLE ID PP83D-2
PROJECT PINE PASS
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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								OCCASIONAL SLICKENSIDES THROUGHOUT.		
								87.20-87.30: CRUSHED COAL ZONE. AT 89.70: 0.10M ZONE WITH ABUNDANT CALCITE FRACTURE INFILLING		
93.20	95.40			2.20	0	SLST		MEDIUM TO DARK GREY, CALCAREOUS, STICK, MASSIVE, LIGHTY BIOTURBATED. GRADA TIONAL INTO UNITS ABOVE AND BELOW	95.20	65
95.40	100.60			5.20	0	SS		GRADES FROM VERY FINE GRAINED AT TOP INTO A FINE TO MEDIUM GRAINED; SIMILAR LY FROM MEDIUM GREY AT THE TOP INTO LIGHT GREY; CALCAREOUS, FINE BEDDED, OC CASIONAL SMALL DARK GREY IRREGUALR SHAPED MUDSTONE CLASTS TO 1CM (RIP UP CL ASTS?). TOP 2.0M BIOTURBATED; SMALL COAL LENS AT 0.05M FROM BOTTOM; GRADA TIONAL INTO SILTSTONE ABOVE BUT VERY SHARP BOTTOM CONTACT. NOTE: THIS SAN DSTONE UNIT IS VERY SIMILAR TO THE CLEAN SANDSTONE IN PP83D-1 AT 140.70M TO 157.12M	98.30	73
100.60	113.20			12.60	0	SLST /SANDSTONE/MUDSTONE		MOSTLY SILTSTONE WITH INTERBEDDED FINE GRAINED SANDSTONE AND MINOR MUDSTONE /SHALE; MEDIUM TO DARK GREY, BROKEN TO STICK, CALCAREOUS, LIGHTLY BIOTURBAT ED THROUGHOUT. OCCASIONAL CALCITE LENS TO 1CM THROUGHOUT. 100.60-100.80:	104.50 107.60 110.60	70 76 75

CORE DESCRIPTION

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PROJECT PINE PASS
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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
100.60	113.20			12.60	0	SLST	/SANDSTONE/MUDSTONE	MUDSTONE IN SHARP CONTACT WITH SANDSTONE ABOVE. AT 100.80: 0.15M BAND CALC ITE. AT 106.20: COAL LENSE <1CM. 108.40-108.50 AND 112.40-113.20 CARBONA CEOUS/COALY MUDSTONE	.	.
113.20	116.60			3.40	0	SS		VERY FINE GRAINED, MEDIUM GREY WITH INTERBEDDED SILTSTONE, MODERATELY BIOTU RBATED, CALCAREOUS	113.70	75
									.	.
116.60	123.40			6.80	0	MDST		BECOMES SILTY TOWARDS BOTTOM, DARK GREY TO BLACK, SLICKENSIDED THROUGHOUT, SILTIER ZONES ARE CALCAREOUS, MINOR COAL DEBRIS THROUGHOUT. 118.0-119.5 CO ALY TO CARBONACEOUS, A FEW 1CM SANDSTONE LENSES IN BOTTOM 0.80M. CALCITE FRACTURE INFILLING IN LOWER 0.10M	122.80	70
									.	.
									.	.
									.	.
123.40	142.65			19.25	0	SLST	SANDSTONE	MEDIUM TO DARK GREY, MOTTLED, STICK TO BROKEN, CALCAREOUS, LIGHTLY BIOTURBA TED THROUGHOUT, CALCITE	125.90	70
									128.90	75
								FRACTURE INFILLING AND MINOR SOFT SEDIMENT SLUMPING THROUGHOUT. AT 136.0: CROSS BEDDING INDICATES 'RIGHT WAY	132.10	78
								UP'. 138.25-140 .0: MASSIVE SILTY MUDSTONE. AT 142.65: GRADES INTO THE NEXT UNIT	135.90	83
142.65	149.62			6.97	0	MDST		BLACK, DULL WITH MINOR SILTSTONE ZONES, MEDIUM GREY, LIGHTLY BIOTURBATED, MINOR COAL LENSES/WISPS	148.10	88
									.	.

CORE DESCRIPTION

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								THROUGHOUT. 147.40-148.70: SILTSTONE TO FINE GRAIN		
								ED SANDSTONE, MEDIUM GREY. BOTTOM 0.30M: COALY		
149.62	152.26			2.64	25	COAL		RECOVERY .66M (25%): NO SAMPLES. 149.62-150.89: LOST CORE; LOGS INDICATE O .82M CLEAN COAL, 0.31M COALY	151.20	85
								SHALE. 150.89-151.20: COAL; RECOVERY 0.16M (5		
								2%) BRIGHT, HARD, BANDED. 151.20-151.41: COALY SHALE;		
								RECOVERY 0.19M (90%) BLACK, DULL WITH ABUNDANT COAL LENSES. 151.41-151.73 COAL: RECOVERY 0.25M		
								(78%), 0.05M CLEAN, 0.20M DIRTY WITH 'OOLITIC' BLACK GRANULES <1MM.		
								(NOTE: WHEN WEATHERED THEY		
								TAKE ON A HEMATITE RED COLOUR. THIS OOLITIC COA		
								LY ZONE HAS BEEN SEEN IN SURFACE TRENCHING AND MAY		
								PROVE TO BE ANOTHER COR		
								ELATION TOOL). 151.73-152.26 COAL: RECOVERY 0.06M (11%) CLEAN, BRIGHT		
152.26	153.62			1.36	0	SH	COALY/CARBONACEOUS MUDSTO	BLACK, DULL WITH COAL LENSES COMMON THROUGHOUT		
153.62	177.62			24.00	0	SLST	SANDSTONE	INTERBEDDED SILTSTONE AND VERY FINE GRAINED SANDSTONE WITH MINOR INTERBEDS	157.30	85
								OF MUDSTONE. MEDIUM AND DARK GREY WITH RARE LIGHT GREY LENSES, CALCAREOUS	160.30	82
								BROKEN TO STICK, LIGHTLY	163.40	86
								BIOTURBATED THROUGHOUT. VERY MINOR CALCITE FRACTU		
								RE INFILLING THROUGHOUT. TOP CONTACT GRADATIONAL, BOTTOM	169.40	85
								2.0M SLIGHTLY COA		

CORE DESCRIPTION 02/28/84

HOLE ID PP83D-2
PROJECT PINE PASS
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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
153.62	177.62			24.00	0	SLST	SANDSTONE	RSER THAN REST OF UNIT. NOTE: THIS 'UNIT' IS VIRTUALLY THE SAME FROM TOP T O BOTTOM WITH NO DISTINCT LITHOLOGIC CHANGES OR FEATURES OF NOTE.	175.60	80
177.62	178.65		04	1.03	77	COAL		RECOVERY 0.79M (77%) MOSTLY CLEAN, BRIGHT, HARD. 0.07 CLEAN; 0.015 HIGH AS H BAND; 0.705 CLEAN. SEPARATION WITH ROOF, VISUAL - FAIR, PHYSICAL - GOOD ; WITH FLOOR, VISUAL - FAIR TO POOR, PHYSICAL - FAIR. SAMPLE #4; 177.62-178.65		
178.65	179.04			.39	95	MDST	/CARBONACEOUS/SILTSTONE	DARK GREY TO BLACK, DULL WITH COAL LENSES THROUGHOUT, RECOVERY 0.37M		
179.04	179.18			.14	35	SH	SHALEY COAL	RECOVERY 0.05 (35%) FISSILE, CRUSHED		
179.18	187.64			8.46	0	SS		LIGHT GREY, FINE GRAINED, FINE BEDDED, LIGHTLY BIOTURBATED, CROSS BEDDING I NDICATES 'RIGHT WAY UP', CALCAREOUS. BOTTOM 3.5M CONTAINS A FEW INTERBEDS OF DARK GREY SILTSTONE/MUDSTONE	181.40 187.60	70 76
187.64	189.60		05	1.96	66	COAL		RECOVERY 1.29M (66%); HARD, BROKEN BANDED, DULL TO BRIGHT. SEPARATION WITH ROOF, VISUAL - FAIR TO POOR, PHYSICAL - FAIR; WITH FLOOR, VISUAL & PHYSICAL - POOR. SAMPLE #5: 187.64-189.60		

CORE DESCRIPTION

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
189.60	191.41		06	1.81	85	COAL		RECOVERY 1.54 (85%). 189.60-189.84 COALY SHALE: RECOVERY 0.17M (71%), DULL , BLACK, WITH NUMEROUS COAL BANDS. 189.84-190.00 COAL: RECOVERY 0.09M (56%), CRUSHED. 190.00-191.22 CARBONACEOUS SHALE: RECOVER 1.18M (97%), BLACK, DULL, VERY CARBONACEOUS THROUGHOUT, OCCASIONAL SMALL COAL LENS ESPECIALLY IN TOP 0.30M. 191.22-191.31 COAL: RECOVERY 0.02M (22%). 191.31-191.41 COALY SHALE: RECOVERY 0.08M (80%). SAMPLE #6: 189.60-191.41		
191.41	192.56		07	1.15	67	COAL		RECOVERY 0.77M (67%); CLEAN, BRIGHT, BROKEN. SAMPLE #7: 191.41-192.56		
192.56	192.68			.12	75	SH	COALY	RECOVERY 0.08M (75%)		
192.68	192.78			.10	0	LC		LOG INDICATES IT WAS COAL		
192.78	193.58			.80	0	SS		MEDIUM GREY, VERY FINE GRAINED, CROSS BEDDED, GRADATIONAL INTO NEXT UNIT		
193.58	196.55			2.97	0	SLST	/SILTY/MUDSTONE	DARK GREY TO BLACK, BROKEN TO STICK, CALCAREOUS, MINOR INTERBEDDED, MEDIUM GREY SANDSTONE LENSES		
196.55	197.60			1.05	0	SH	COALY	BLACK, BROKEN, ABUNDANT COAL BANDS, FISSILE		
197.60	199.20			1.60	0	SLST		DARK GREY, CALCAREOUS, BROKEN,		

CORE DESCRIPTION

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								COAL WISPS AT A LOW CORE BEDDING ANGLE THROU GHOUT	.	.
199.20	200.30			1.10	O	SH	COALY	BLACK COALY/CARBONACEOUS THROUGHOUT WITH OCCASIONAL 1CM COAL LENSES	.	.
200.30	204.50			4.20	O	SLST	MUDSTONE	DARK GREY, CALCAREOUS, STICK CORE, WISPY CALCITE AND MINOR COAL LENSES THRO UGHOUT	.	.
204.50	205.40			.90	O	SLST	SANDSTONE	MEDIUM GREY, MASSIVE, CALCAREOUS; ABUNDANT IRREGULAR FRACTURES MOST WITH CALCITE INFILLING	.	.
205.40	209.65			4.25	O	MDST		DARK GREY, SILTY NEAR TOP, COALY SHALE TOWARDS BOTTOM, BROKEN TO STICK, LOWER 1.0M CONTAINS COMMON COAL LENSES AND BLEBS	.	.
209.65	211.10			1.45	O	SS		MEDIUM TO LIGHT GREY, FINE GRAINED WITH 0.30M DARK GREY, SILTY ZONE IN MIDD LE, CALCAREOUS, STICK TO BROKEN	.	.
211.10	217.68			6.58	O	MDST		DARK GREY TO BLACK, BROKEN TO STICK, CALCAREOUS, SILTY TOWARDS BOTTOM, MASS IVE, WISPY CALCITE THROUGHOUT. OCCASIONAL COALY ZONE IN UPPER 2.5M	.	.
217.68	220.60			2.92	O	SLST		WITH INTERBEDDED FINE GRAINED SANDSTONE, MEDIUM GREY,	218.20	75

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								CALCAREOUS, STICK TO BROKEN, LIGHTLY BIOTURBATED	.	.
220.60	221.95			1.35	O	MDST		BLACK, COALY, ABUNDANT CALCITE FRACTURE INFILLING, CONTORTED, SLICKENSIDES	.	.
221.95	227.10			5.15	O	SS	SILTSTONE	INTERBEDDED FINE GRAINED SANDSTONE AND SILTSTONE, MEDIUM GREY, BROKEN, ABUN DANT CALCITE FRACTURE INFILLING. LIGHTLY CONTORTED AND FAULTED, CORE BEDDI NG ANGLES STEEPEN DOWNSECTION, MINOR PYRITE BLEBS TO 0.5CM	227.00	45
227.10	232.57			5.47	O	MDST		CARBONACEOUS/COALY, BLACK, HIGHLY BROKEN, ABUNDANT CALCITE FRACTURE INFILLI NG, BEDDING ANGLES ARE HIGHLY VARIABLE FROM 60 TO 5 DEGREES, CALCAREOUS	232.20	30
232.57	239.00			6.43	O	FLTZ		HIGHLY BROKEN & SHATTERED, VERY POOR RECOVERY. (REC APPROX 2.30M - 36%), HI GHLY SHEARED WITH CALCITE SMEARED ALONG SLICKENSIDED FRACTURES. CALCITE HAS AN 'OPAL-LIKE' TEXTURE. CORE BEDDING ANGLES ARE QUITE SMALL I.E. 10 TO 20 DEGREES. MATERIAL THAT WAS RECOVERED IS A BLACK COALY SHALE WITH ABUNDA NT COAL DEBRIS THROUGHOUT. NOTE: BEYOND THIS ZONE ALL CORE BEDDING ANGLES ARE VERY SHALLOW. VERY LITTLE SECTION IS BEING DRILLED.	.	.
239.00	248.44			9.44	O	SLST		MEDIUM TO DARK GREY, CALCAREOUS WITH INTERBEDDED	240.10	15

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TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								MUDSTONE; CALCITE FRACTURE INFILLING THROUGHOUT, FINER GRAINED DOWN SECTION	240.60	25
									247.00	12
248.44	251.15		08	2.71	79	SH	COALY	BLACK, BROKEN, VERY COALY, BOTTOM 0.60M COAL. RECOVERY 2.15M (79%). NOTE: MAY BE DRILLING ALONG HANGING WALL OF A SEAM. SAMPLE #8: 248.44-251.15		
251.15	252.41		09	1.26	89	TNST	COAL	MEDIUM BROWNISH GREY. FLAKY, MODERATELY SOFT TONSTEIN BANDS INTERSPERSED WITH THIN COAL BANDS. NOTE: THESE APPEAR TO BE A REPEAT OF THE TONSTEINS FOUND NEAR THE TOP OF THIS HOLE IN THE SEAM AT 26.20M TO 28.05M. RECOVERY 1.12M (89%). SAMPLE #9: 251.15-252.41		
252.41	262.54		10	10.13	35	COAL		RECOVERY 3.51M (35%); CRUSHED TO RUBBLE, BRIGHT, SOFT. NOTE: DRILLING DOWN DIP THEREFORE SEAM IS VERY MUCH THINNER IN TRUE THICKNESS. SAMPLE #10: 252.41-262.54		
262.54	264.85			2.31	0	SLST		DARK GREY, CALCAREOUS, MASSIVE, STICK		
264.85	277.67			12.82	0	SS		FINE GRAINED, MEDIUM GREY, CALCAREOUS COMMON CALCITE	264.00	32

CORE DESCRIPTION

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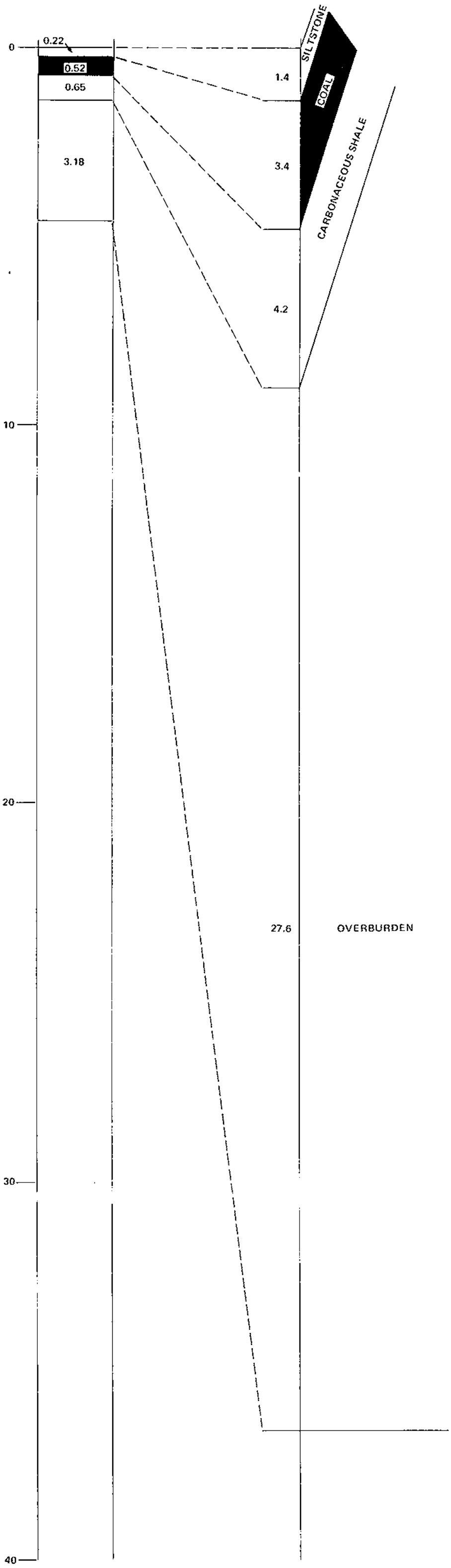
TOP	BASE	SEAM	SAM NUM	THIK	% REC	MAJ	MINOR	DETAIL	DEPTH	C.B.A.
								FRACTURE INFILLING		
								TOTAL DEPTH AT 277.67	267.00	25
									270.00	15
									274.50	10



SCALE 1:100

1 0.5 0 1 2 3 4 METRES

DETAILS OF TRENCH

DATE: 1983–06–12

MEASURED BY: AW/DWF

INCLINATION: 0°

BEARING: 084°

APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH
6 163 565 m N
541 120 m E

REF COAL LICENSE 6265

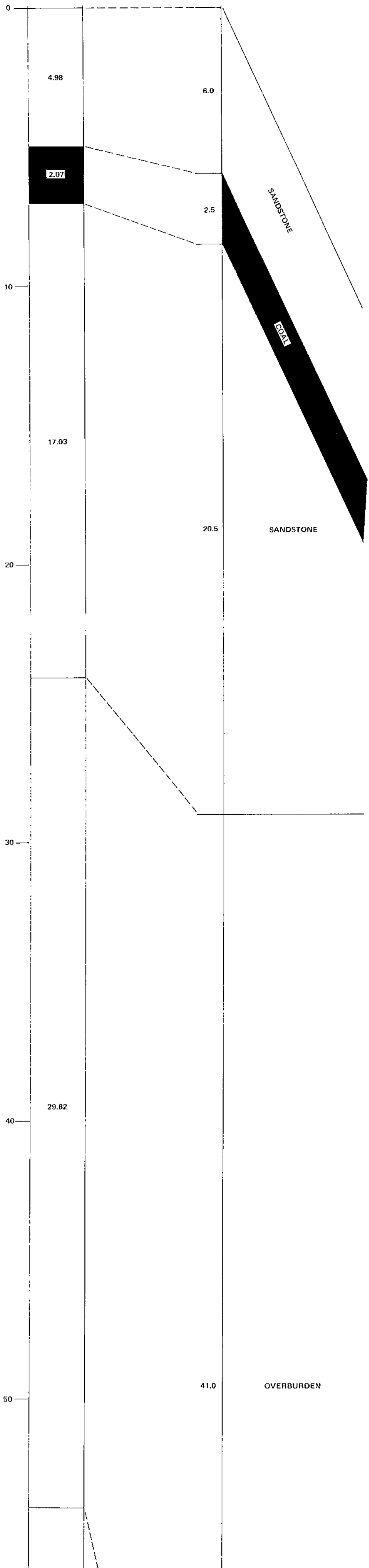
NOTE: ALL BEARINGS MEASURED FROM TRUE NORTH
DECLINATION SETTING: 29° 30' E

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR–83–1

AUTHOR: AW/DWF	SCALE: 1:100	DRAWN BY:
DATE: 83 10	REVISED:	DRAWING No: PP-6X-26
To Accompany		



DETAILS OF TRENCH

DATE:	1983–06–16
MEASURED BY:	AW/DWF
INCLINATION:	6° above horizontal
BEARING	298° AZ
APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH	6 163 635 m N 540 920 m E
REF COAL LICENSE	6266

NOTE: ALL BEARINGS MEASURED FROM TRUE NORTH
DECLINATION SETTING: 29° 30′ E

SCALE 1:100

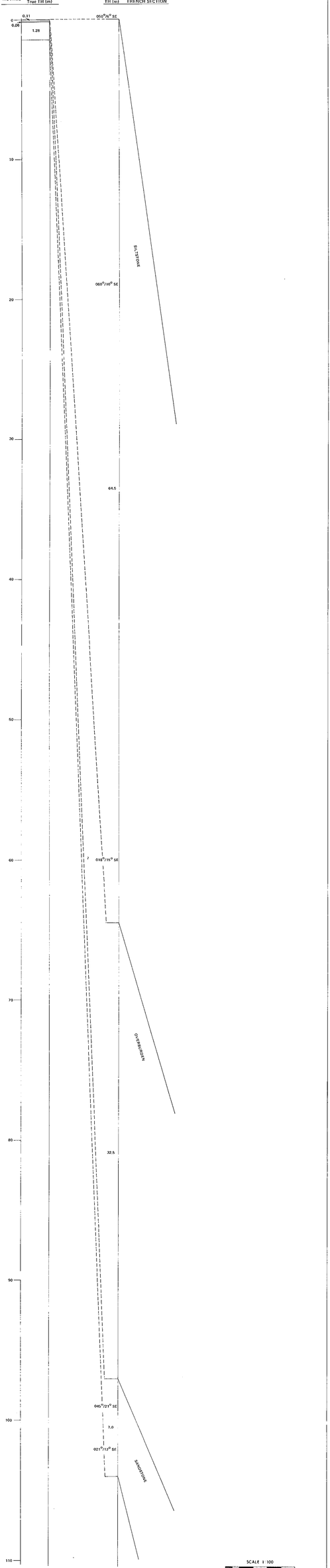
1 0.5 0 1 2 3 4 METRES

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR–83–3

AUTHOR: AW/DWF	SCALE:	DRAWN BY:
DATE: 83 10	REVISED:	DRAWING No: PP-6X-28
to Accompany		



SCALE 1:100

1 0 5 0 1 2 3 4 METRES

DETAILS OF TRENCH

DATE: 1983-06-14 to 16

MEASURED BY: AW/DWF

INCLINATION: 6° above horizontal

BEARING: 286° AZ

APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH: 5 463 575 m N, 543 050 m E

REF COAL LICENSE 6266

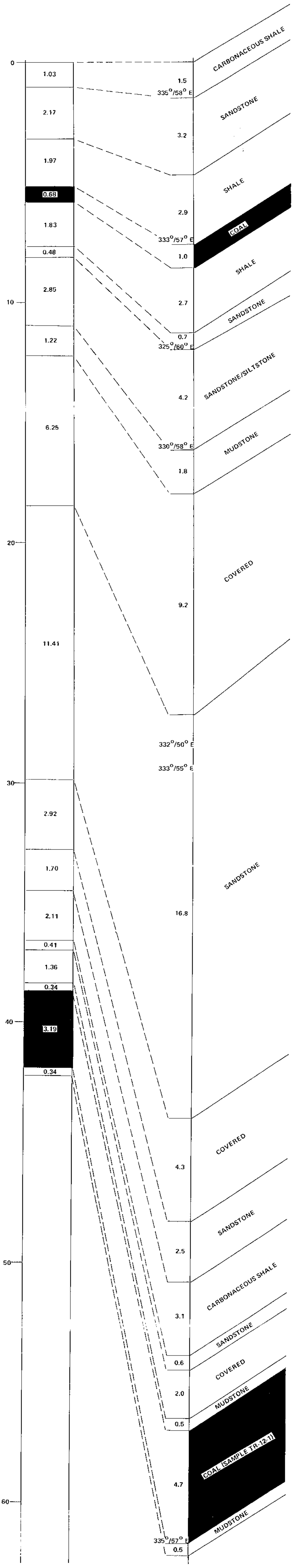
NOTE: ALL BEARINGS MEASURED FROM TRUE NORTH. DECLINATION SETTING: 29° 30' E

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR-83-2

SECTION: AW/DWF	SCALE: 1:100	DRAWN BY:
DATE: 83 10	REVISED:	DRAWING No: PP-6X-27
M. Richards		



SCALE 1:100

1 0.5 0 1 2 3 4 METRES

DETAILS OF TRENCH

DATE: 1983–07–20

MEASURED BY: AW/DWF

INCLINATION: ø

BEARING: 027° AZ

APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH: 6 163 230 m N
539 990 m E

REF. COAL LICENSE 6263

NOTE . ALL BEARINGS MEASURED FROM TRUE NORTH

. DECLINATION SETTING: 29° 30' E

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR–83–12

AUTHOR: AW/DWF	SCALE: 1:100	DRAWN BY:
DATE 83 10	REVISED	DRAWING No PP-6X-38
To Accompany		

DETAILS OF TRENCH

DATE: 1983-07-20,22

MEASURED BY: AW/DWF

INCLINATION: ø

BEARING:

0	– 18.0	189° AZ
18.0	– 35.0	210° AZ
35.0	– 50.0	221° AZ
50.0	– 81.0	230° AZ
81.0	– 100.0	248° AZ
100.0	– 146.0	250° AZ

APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH: 6 162 935 m N
540 630 m E

REF. COAL LICENSE 6263

NOTE. ALL BEARINGS MEASURED FROM TRUE NORTH
. DECLINATION SETTING: 29° 30' E

SCALE 1:100

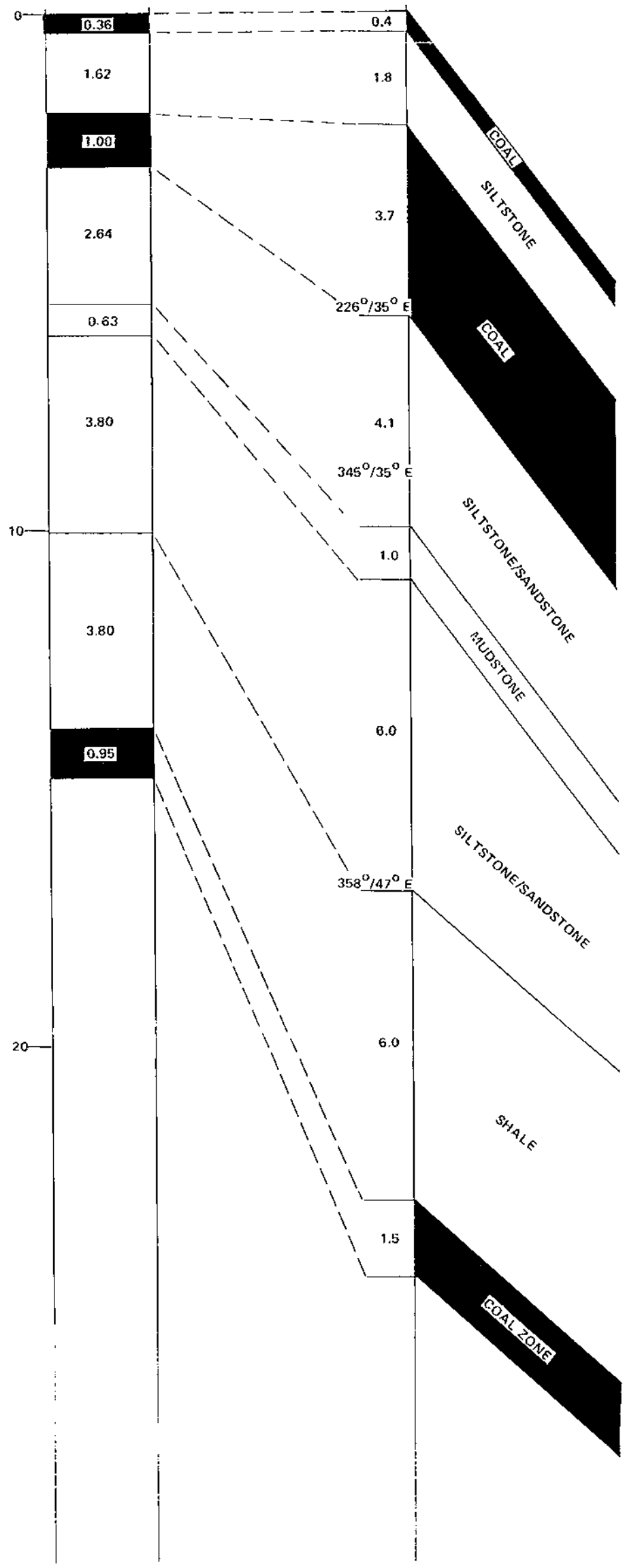
1 0.5 0 1 2 3 4 METRES

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR-83-11

AUTHOR AW/DWF	SCALE 1:100	DRAWN BY:
DATE 83 10	REVISED	DRAWING NO: PP-6X-37
To Accompany		



SCALE 1:100

1 0.5 0 1 2 3 4 METRES

DETAILS OF TRENCH

DATE: 1983–07–19

MEASURED BY: AW/DWF

INCLINATION: 0°

BEARING: 0 – 9.0m 254° AZ
9.0 – 24.5 247° AZ

APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH **6 163 105** m N
540 485 m E

REF. COAL LICENSE **6263**

NOTE . ALL BEARINGS MEASURED FROM TRUE NORTH
. DECLINATION SETTING 29° 30' E

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR–83–10

AUTHOR: AW/DWF	SCALE 1:100	DRAWN BY:
DATE: 83 10	REVISED	DRAWING No: PP-6X-36
To Accompany		

DETAILS OF TRENCH

DATE:	1983–07–23 to 27
MEASURED BY:	AW/DWF
INCLINATION:	6° ABOVE HORIZONTAL
BEARING:	0 – 30.0 212° AZ 30.0 – 50.0 240° AZ 50.0 – 100.0 247° AZ 100.0 – 131.0 253° AZ 131.0 – 150.0 233° AZ 150.0 – 200.0 248° AZ 200.0 – 240.5 250° AZ

APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH: 6 163 085 m N, 540 600 m E

REF. COAL LICENSE 6263

NOTE: . ALL BEARINGS MEASURED FROM TRUE NORTH

. DECLINATION SETTING: 29° 30' E

SCALE 1 : 100

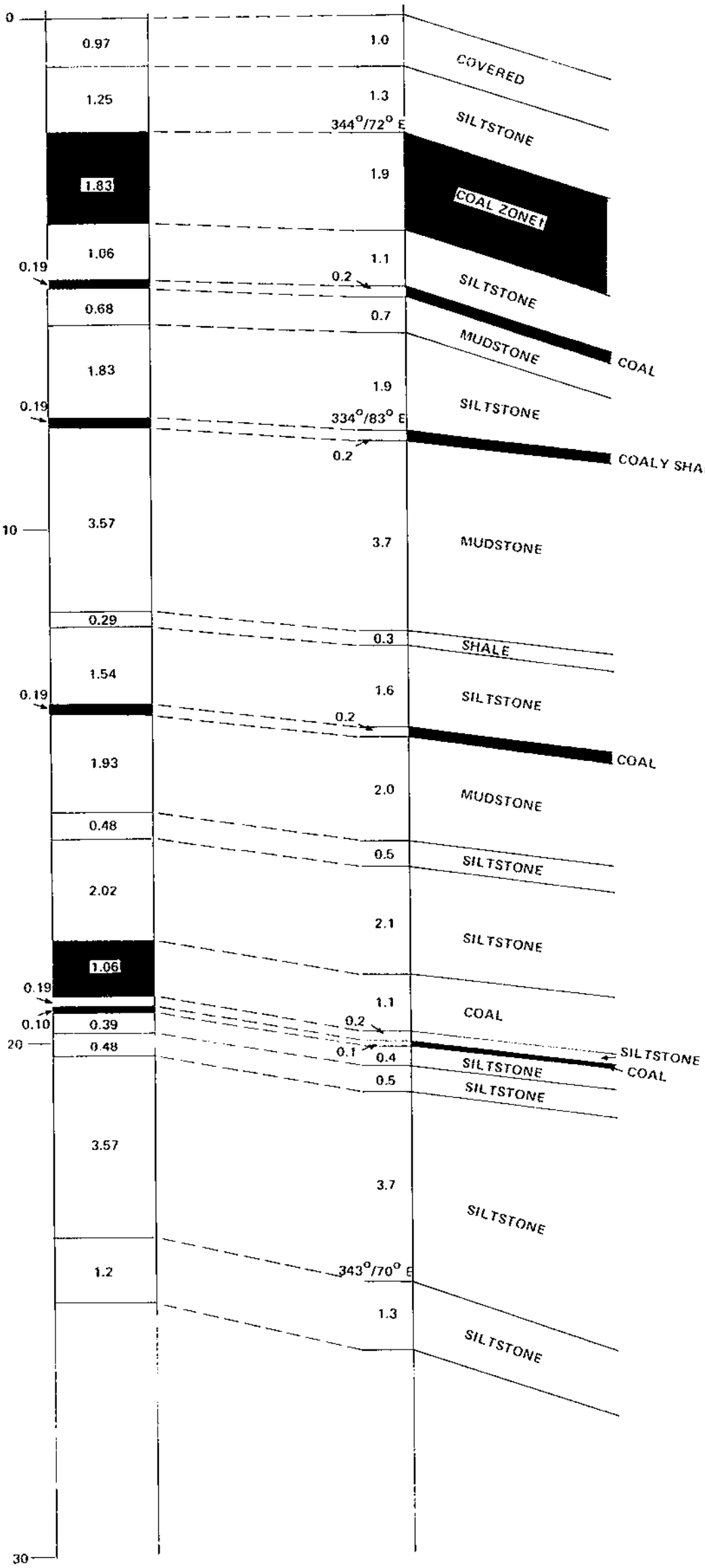
1 0.5 0 1 2 3 4 METRES

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR–83–9

AUTHOR AW/DWF	SCALE 1 : 100	DRAWN BY
DATE 83 10	REVISED	DRAWING No. PP-6X-35



† CONTAINS THIN TONSTEIN BAND TO BASE OF ZONE ... TONSTEIN BAND WAS SAMPLED ... DESIGNATED AS TR-8-1

SCALE 1:100

1 0 5 0 1 2 3 4 METRES

DETAILS OF TRENCH

DATE: 1983-07-19

MEASURED BY: AW/DWF

INCLINATION: ø

BEARING: 248° AZ

APPROX.UTM COORDINATES AT MIDPOINT OF TRENCH 6 163 055 mN
540 530 mE

REF. COAL LICENSE 6263

NOTE * ALL BEARING MEASURED FROM TRUE NORTH

* DECLINATION SETTING: 29° 30' E

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR-83-8

AUTHOR: AW/DWF	SCALE 1:100	DRAWN BY:
DATE 83 10	REVISED	DRAWING No PP-6X-34
To Accompany		

DETAILS OF TRENCH

DATE: 1983-07-19

MEASURED BY: AW/DWF

INCLINATION: 8° above horizontal

BEARING:
0 – 150.0 245° AZ
150.0 – 200.0 251° AZ
200.0 – 250.0 255° AZ
250.0 – 270.0 245° AZ

APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH: 6 162 970 m N, 540 400 m E

REF COAL LICENSE: 6263

NOTE: ALL BEARINGS MEASURED FROM TRUE NORTH. DECLINATION SETTING: 29° 30' E

SCALE 1:100

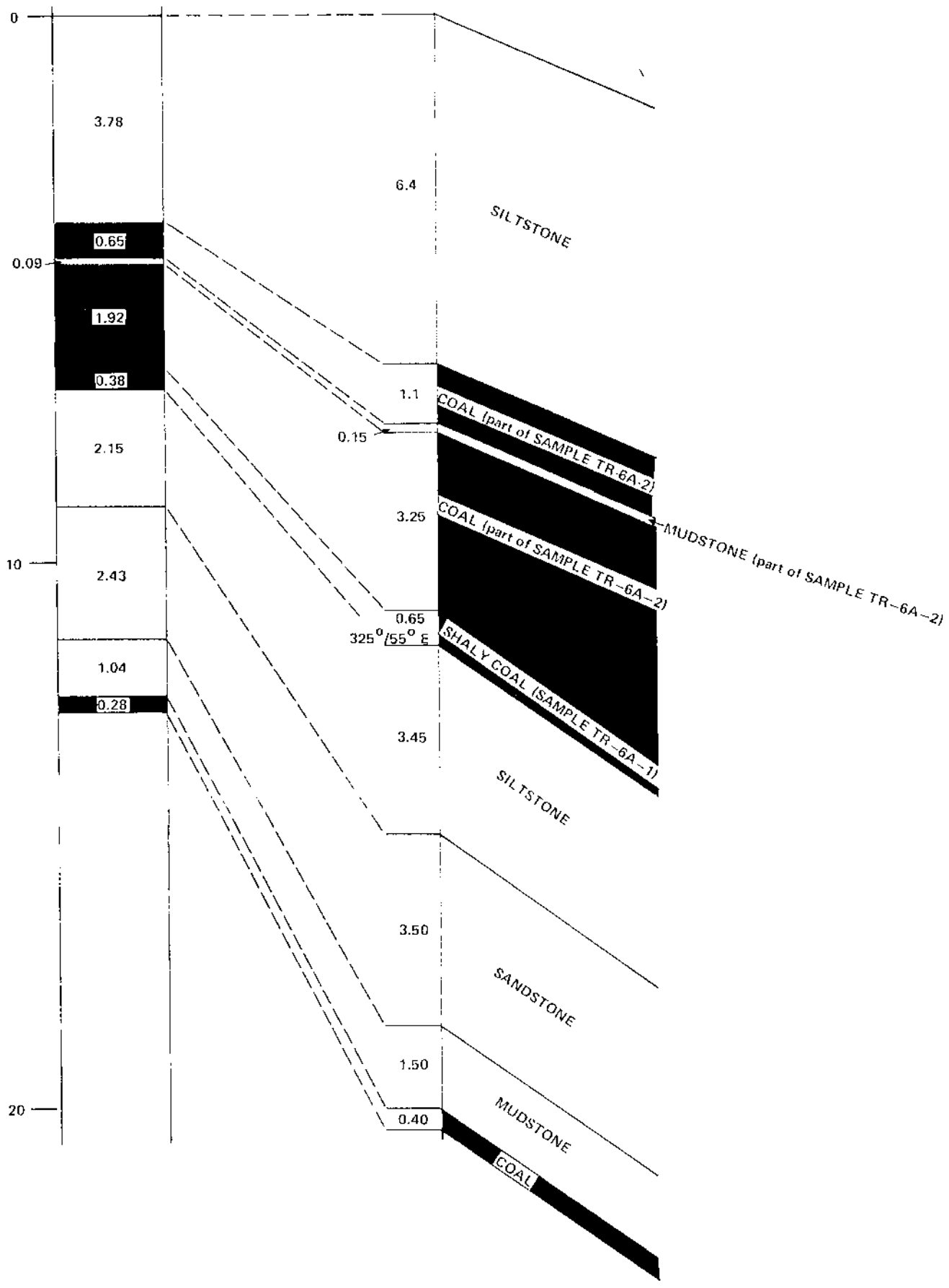
1 0.5 0 1 2 3 4 METRES

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR-83-7

AUTHOR AW/DWF	SCALE 1:100	DRAWN BY
DATE 83 10	REVISED	DRAWING No. PP 6X-33



SCALE 1:100

1 0.5 0 1 2 3 4 METRES

DETAILS OF TRENCH

DATE: 1983–06–22

MEASURED BY: AW/DWF

INCLINATION: 0 – 13.0m ... 15° above horizontal
13.0 – 20.4m ... 0°

BEARING: 0 – 13.0m ... 267° AZ
13.0 – 20.4m ... 203° AZ

APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH
6 162 815 m N
540 245 m E

REF COAL LICENSE 6263

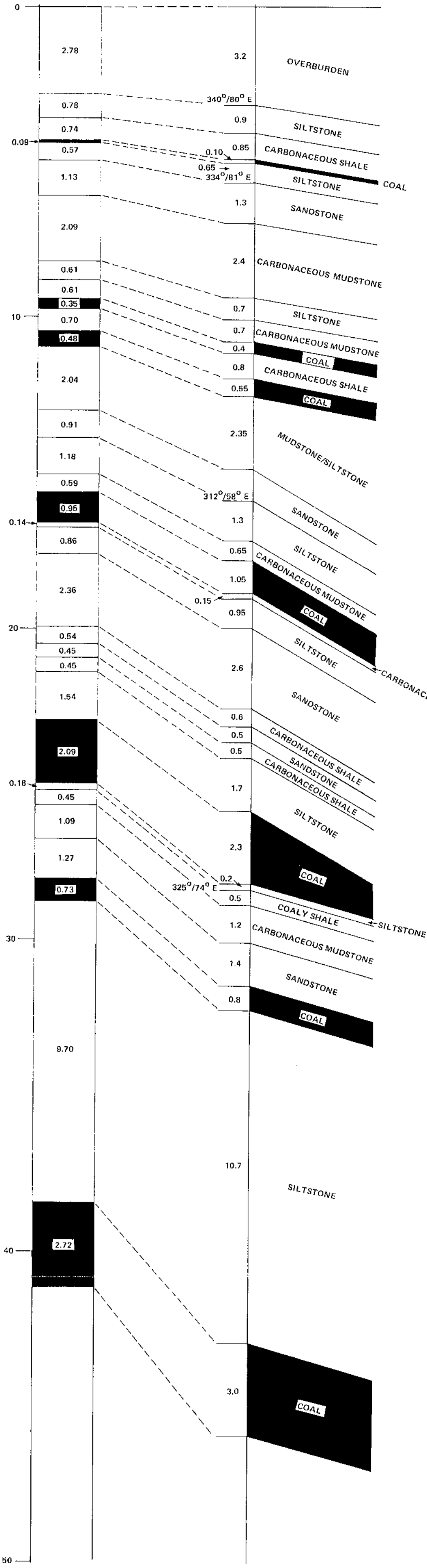
NOTE: ALL BEARINGS MEASURED FROM TRUE NORTH
DECLINATION SETTING: 29° 30' E

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR–83–6A

AUTHOR AW/DWF	SCALE 1:100	DRAWN BY
DATE 83 10	REVISED	DRAWING No PP-6X-32
To Accompany		



SCALE 1:100

1 0.5 0 1 2 3 4 METRES

DETAILS OF TRENCH

DATE: 1983–06–22

MEASURED BY: AW/DWF

INCLINATION: 0°

BEARING: 222° AZ

APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH
6 162 825 m N
540 265 m E

REF COAL LICENSE 6263

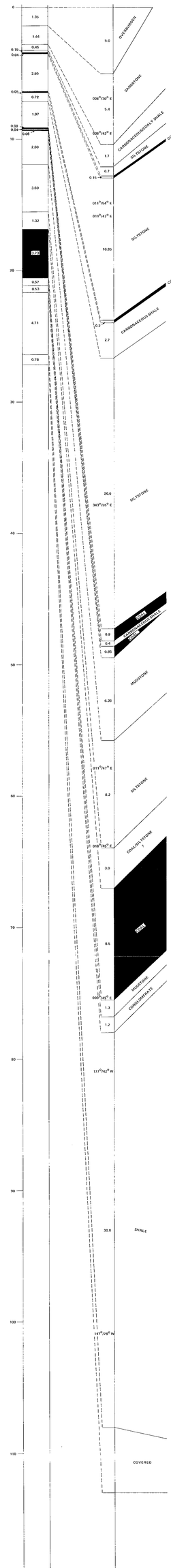
NOTE: ALL BEARINGS MEASURED FROM TRUE NORTH
DECLINATION SETTING: 29° 30' E

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR–83–6

AUTHOR: AW/DWF	SCALE: 1:100	DRAWN BY:
DATE: 83 10	REVISED:	DRAWING No: PP-6X-31
To Accompany		



DETAILS OF TRENCH

DATE: 1983-06-21

MEASURED BY: AW/DWF

INCLINATION: 0 – 56.0m ... 10° above horizontal
56.0 – 113.0m ... 11° above horizontal

BEARING: 0 – 56.0m ... 177° AZ
56.0 – 113.0m ... 163° AZ

APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH: 6 163 130 m N
549 660 m E

REF COAL LICENSE 6263

NOTE: ALL BEARINGS MEASURED FROM TRUE NORTH
DECLINATION SETTING: 29° 30' E

SCALE 1:100

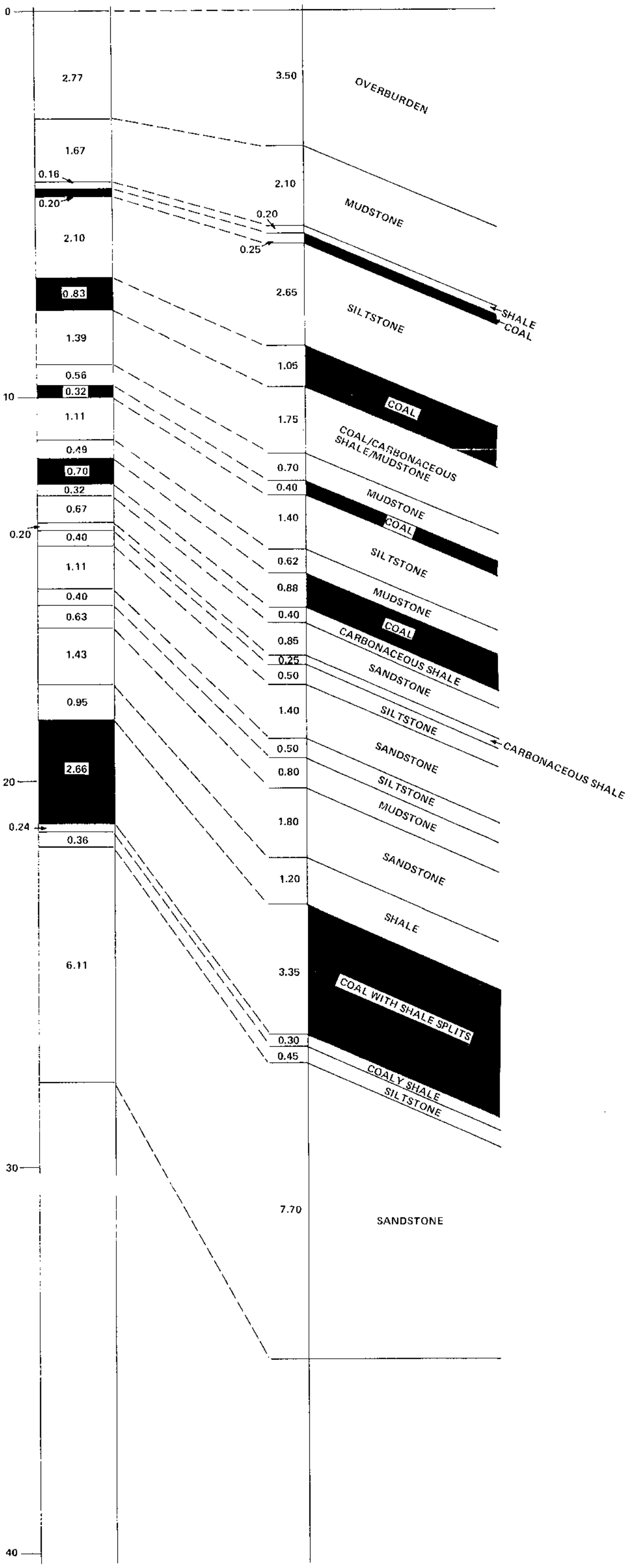
1 0 5 0 1 2 3 4 METRES

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR-83-5

AUTHOR: AW/DWF | SCALE: 1:100 | DRAWN BY:
DATE: 83.10 | APPROVED:
No. ILLUSTRATIONS: | DRAWING No: PP-EX-30



SCALE 1:100

1 0.5 0 1 2 3 4 METRES

DETAILS OF TRENCH

DATE:	1983–06–21
MEASURED BY:	AW/DWF
INCLINATION:	9° above horizontal
BEARING:	217° AZ
APPROX. UTM COORDINATES AT MIDPOINT OF TRENCH	6 162 790 m N 540 565 m E
REF COAL LICENSE	6263

NOTE: ALL BEARINGS MEASURED FROM TRUE NORTH
DECLINATION SETTING: 29° 30' E

Crows Nest Resources Limited
EXPLORATION

PINE PASS
N.E. B.C.

MEASURED TRENCH SECTION
TR–83–4

AUTHOR: AW/DWF	SCALE: 1:100	DRAWN BY:
DATE: 83 10	REVISED	DRAWING No: PP-6X-29
To Accompany		

CROWS NEST RESOURCES LIMITED

PINE PASS PROJECT

N.E. B.C.

COAL EXPLORATION 1983